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COMPUTING INTERNATIONAL

JULY 1988

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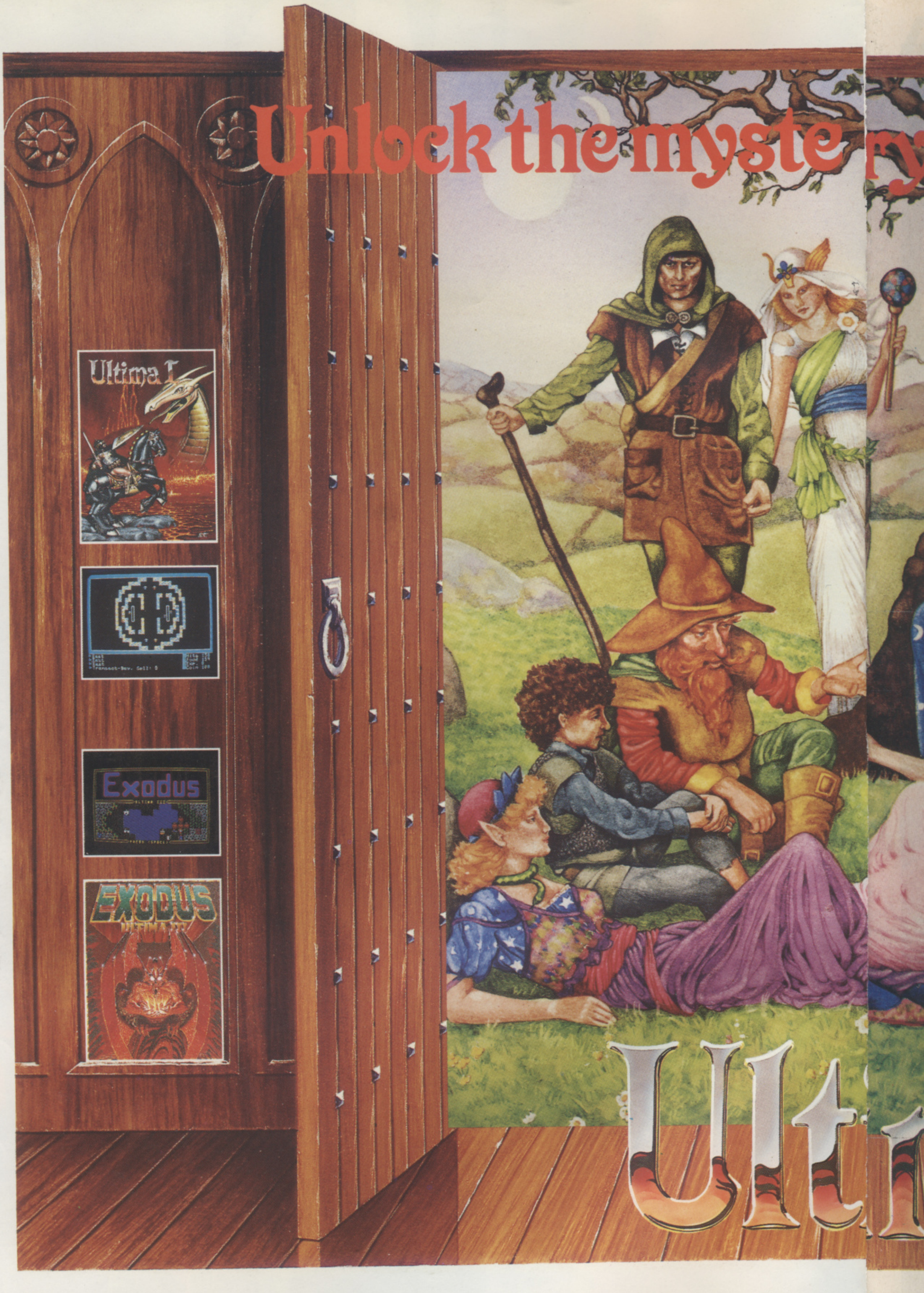
Prepare for the Third Dark Age. The appearance of a fiery island has heralded the rebirth of dark forces and sinister occurrences. It is rumoured that the evil force which now plagues Sosaria is offspring of the long-dead Mondain and Minax. The only clue to its entity is a word scrawled in blood on the deck of a wrecked ship: EXODUS.

Once again the call for heroes is sounded. Command a party of four adventurers in search of the elusive Exodus.



Beyond the threshold lies the challenge of the greatest epic adventure of all time.

Award-winning Ultima is a five-part saga of unprecedented magnitude and imagination. Your quest is always to track evil to its furthest reaches, but in each successive game you'll experience an entirely new and unique role playing journey.

In the latest sequel – Warriors of Destiny – you are summoned back to Britannia to discover the fate of Lord British. Success involves exploring 8 dungeons and over 30 towns, encountering new monster types, mastering an enhanced combat system, surviving dangerous combat and conversing with hundreds of characters.

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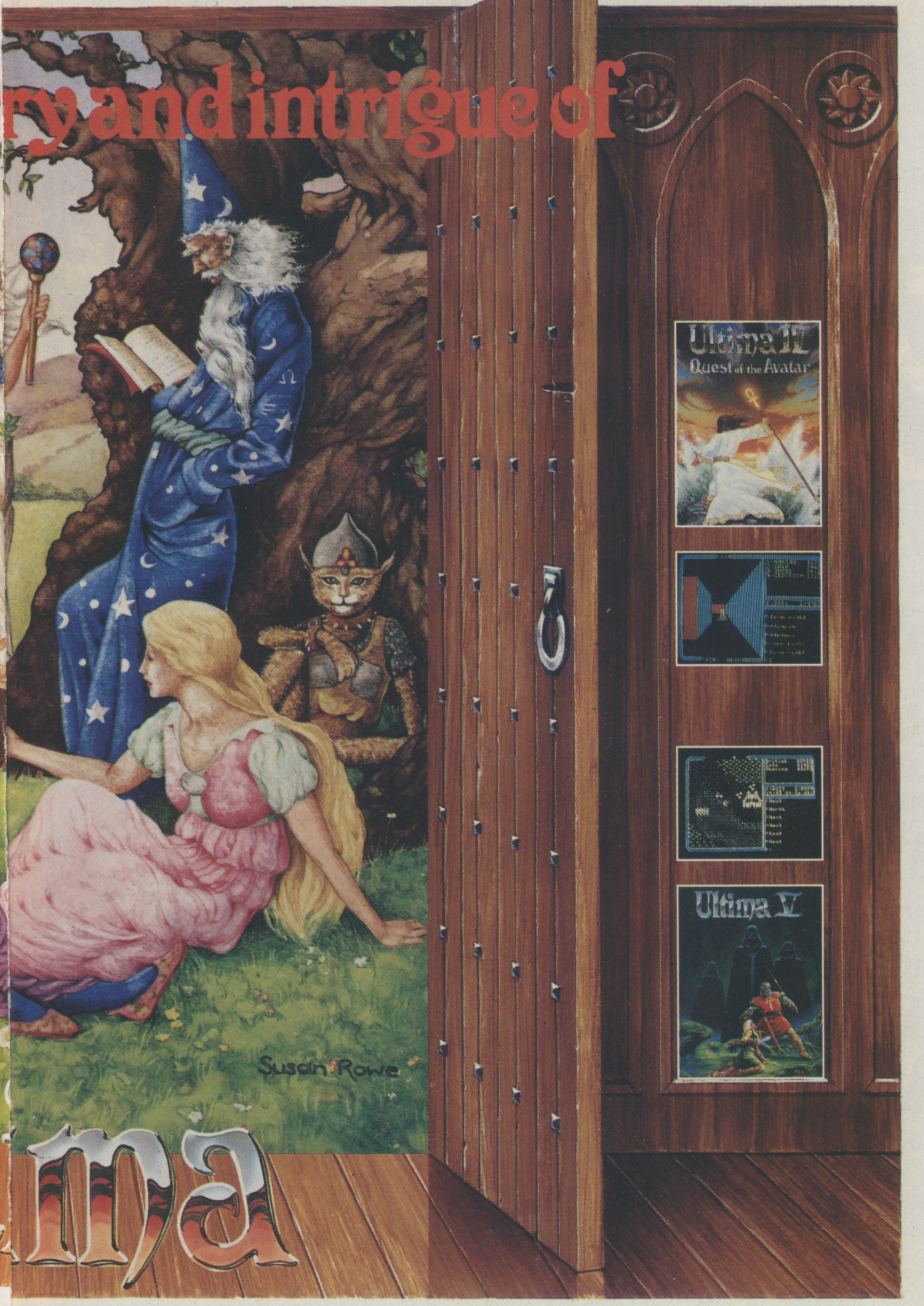

Mondain, Minax and the hellspawn Exodus have finally been vanquished from the lands of Britannia. Peace prevails, but a perfect mortal – an Avatar – is sought to conquer evil and lead the nation into a golden age of prosperity.

With a party of adventurers explore the cities and towns of Britannia, now sixteen times larger than ever before. Demons, dragons and long-dead wizards must be destroyed.

Only those who achieve the status of Avatar reach the final conflict where the ultimate challenge – the self – awaits.

The fantastic discovery of the new underworld entices Lord British from Britannia to explore the vast reaches of the unknown. Mysteriously, all contact with the good king and his companions is lost. In Britannia, fear turns to panic when the group's sole survivor returns with dreaded tales of the expeditions fate.

In a desperate call to arms you are summoned back to Britannia to discover the fate of Lord British and to defeat the self-righteous tyranny that is founded in misguided virtues.

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THE COMMODORE MAGAZINE WITH EVERYTHING

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Dear Reader

There are they say lies, damned lies and statistics. In the computer industry that roughly equals rumours and Commodore stories. Commodore seems to exert a greater fascination than any other company except perhaps IBM. Perhaps it is CBM's boom or bust history, or that though other computer companies may be larger, Commodore is literally a household name, recognised across the world. It seems whatever CBM does – or thinks of doing – is news. It may be partly caused by the 64. As the biggest selling computer ever, the 64 reached more people and introduced them to aspects of computing and in some way changed their lives than would have been thought possible for a company of CBM's size. Because of this the 64 has a special significance to the computer world that still creates interest in it even when many people regard it as practially dead.

Some time ago, we reported that Commodore was thought to be planning a 64 with an integral disk drive. Though a very sensible idea – who really wants to mess around with a tape deck? – utilising the well-tried 64 technology with the newer but cost-efficient 3½″ drive, it doesn't seem to have come to anything. Probably CBM did not have the confidence to think that there would be a rush to put old and new 64 software onto the new format.

Now a new idea for the 64 has surfaced. The story is that Commodore is going to produce, initially for the U.S. at a price of just $99 – about £50 – a challenger based on the 64 for the Nintendo and Sega games console. There will, in this 64 games console, be no keyboard just a built-in cassette deck controlled from a joystick – turning the 64 into a simple games machine.

At first sight, especially for those who want to do nothing but play games it looks like a good commercial idea. Even budget cassette games would run on it, if, as is mostly the case, they are written for joystick control only. Certainly, there is one age group – the subteens – who might generally think it just the "computer" for them. However, a food company who thought they were onto a winner when they marketed a cake mix that all you had to do was bake, found women who bought it didn't want that much removal of the action and only started to buy the mix in large numbers when they had to add an egg. CBM might too discover that even dedicated games players generally like to feel they are using a computer not playing with a toy. Take away the keyboard and that's exactly what the 64 becomes. And there would be no need even for Hogan's Hints, for there would be no way of using even pokes!

At CCI, we are well aware that games playing is by far the greatest use to which the home computer, including the 64, is put. But we also know that our readership regards their computers as more than just playthings. There is nothing mystical about the 64. It is a well-engineered, mass produced machine. It is, it is true, no more than an electronic box of tricks. But I am sure that among its millions of owners many would be sorry to see this ageing but still powerful computer become regarded as just another toy.

Of course, the integral disk drive 64 didn't arrive and the keyboardless 64 may prove just as mythical. But with CBM you never can tell. Commodore stories, however, must be seen before they can really be believed. In this case, I hope they won't be.

A.H.Jacobson

Anthony H. Jacobson
Managing Editor and Publisher

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Telephone 01-278 0333
Editorial ext. 274
Advertising ext: 280/286
Subscriptions ext: 274
Published by Croftward Limited
Finsbury Business Centre
40 Bowling Green Lane
London EC1R 0NE
Distributed by: Comag,
Tavistock Road, West Drayton,
Middx. UB7 7QE
Printed by: Chase Printers Group
Adsetting: Carlton Barclay

Commodore Computing International – an independent magazine for Commodore computer users – is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

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End of CRT?

Japan is likely to dominate the emerging market for newer kinds of flat-panel displays, in particular the active matrix liquid crystal type in which each pixel is controlled by a minute transistor. Displays like these have already enabled Japanese companies to make pocket colour TV sets.

Most of the basic research was carried out in the US and Europe. But, says BIS Mackintosh, the UK electronics consultants, Japan's dominance is almost inevitable because it has overwhelming strength in the consumer electronics field where most of these displays are used.

BIS Mackintosh does not believe the cathode ray tube still used in most TVs will disappear overnight, however, and in large screen sizes may be the only cost effective answer for many years.

Even so, shipments of active matrix displays are forecast to rise from $40m last year to $750m in 1992 and $1.95bn in 1996. BIS Mackintosh has published a report on the subject. It costs £13,000. (It's a big report!)

Gremlin Goes Skate Crazy

A real-life "outdoor pursuit" simulation with a difference is being worked on by Gremlin. Roller Skating is the pastime and as every street wise kid knows, the only way to succeed is to gain "street cred" from your friends and onlookers.

The ideal venue for such a venture is Gremlin's scrolling map of a multi-level car park. Freddy – your skating poseur – must buzz around on his skates performing daredevil stunts such as leaping from ramps, 360 degree spins, barrier jumps and skating backwards. Points are added for successful manoeuvres but the Cred-O-Meter score is only hoisted upwards by achieving suitably 'posy' feats. Points gained on the Ouch-O-Meter (which measures grazes and bumps) naturally means a loss of points on the Cred-O-Meter. Obstacles to negotiate include broken glass, stray dogs, oil and sand patches.

When he thinks he's done well enough, Freddy can present himself to four judges who hold up score cards showing his score. They can either send him back to gain more points by picking up litter (serious loss of Credibility) or provide him with the password to access the next level.

Skate Crazy has an extra dimension – a completely separate interfacing game can be played on side B. Different locations such as the underground subways, city streets and so on must be skated along in this different challenge. Replacement skates can be obtained and together with any points earned can be transferred between games.

The kindly Gremlin programmers have attempted to alleviate the finger-drumming frustration normally associated with multi-load games. Referred to as 'Flexi-Load', their method allows the player to load the main data for each game and then load that game's maps one by one as they want to play them. The order in which the maps/sections are selected is not dictated by the computer and it is hoped that this new approach will be welcomed as it offers more freedom to the players.

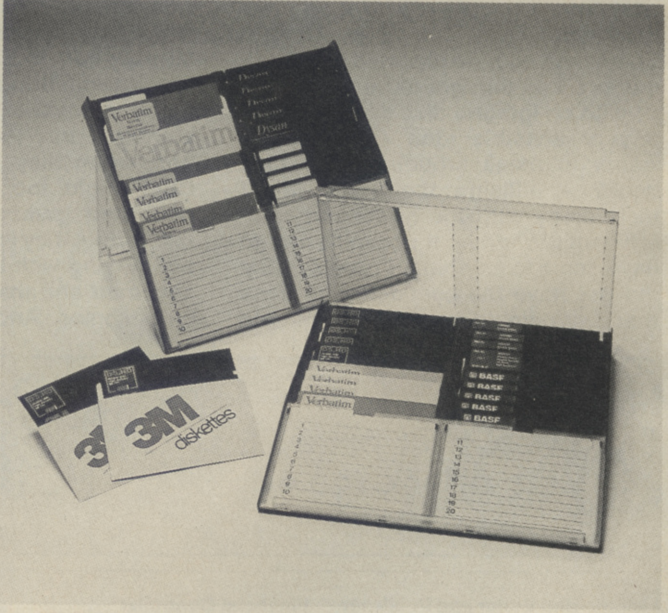
Skate Crazy will be released in early summer 1988 on C64 £9.99 cassette, £14.99 disk.

Disk Porter

The Disk Porter is a new storage unit which holds up to twenty 5.25in diskettes in their sleeves. Only 1.5in (37mm) thick, it can be carried in a normal briefcase, and stored either flat in a drawer or upright on a shelf.

The design allows the immediate identification of every diskette, and a numbered index is provided behind the front panel. In addition, the hinged cover panel can be swung back to make an easel stand when the unit is in use. Price: £19.50.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx HA0 1WL. Tel 0800 333 333, Telex 922493 Action G.



Mandarin Goes International

Mandarin Software announced two further major joint venture agreements. Latest software houses to link up with the new entertainments label are Jawx International of Paris, France and Red Rat of Manchester.

They join Level 9, Powerhouse Software and Bubble Bus, who are already operating under the Mandarin umbrella.

"The fact that we have now signed up Jawx of France indicates that although a UK based company, we are prepared to undertake deals anywhere in the world – just so long as the software house can meet up to our standards," says Chris Payne, Mandarin's marketing manager.

Red Rat's debut title with Mandarin will be Rally Run, a spectacular game based on the Lombard RAC event. Amiga versions will be ready in time for the Personal Computer Show in September, with others to follow, price in the region of £20.

Also in the pipeline from the Manchester company are Crumble's Crisis, a multiple scenario arcade game, and Red Ace, a space ship odyssey.

They will join the Mandarin current line-up which includes Time & Magik from Level 9, Icarus from Powerhouse, and Starquake from Bubble Bus.

"We chose the name Mandarin because that was the title given to leaders in ancient China," says Chris Payne. "They were the people who influenced their world just as much as we hope to influence the one in which we find ourselves – the software industry."

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A simple but effective vertical CPU stand from Action, with a price of £47.00, safely supports CPUs from most popular micros, allowing them to be taken off the desk-top and tucked neatly away underneath. "It is extraordinary just how much more desk space becomes available when the CPU isn't sitting on top of it," says Action marketing director Dick Sheppard.

The stand has a protective lining, and is easily adjustable to accommodate any width of CPU from 4.25in to 7.00in (108mm to 178mm).

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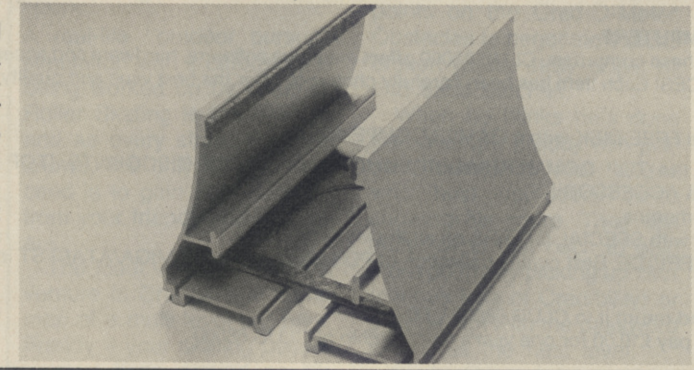

Battlecar Marauder

Coming soon from Hewson: Battlecar Marauder, blasting aliens from the earth and skies. Variable intensity lasers speed through the battlefield, winder missiles skim low overhead, Molotov cocktails explode to your left and right. Battlecar Marauder is the vertical scrolling invention of Glaswegian Mark Kelly, with graphics from author Steve Crow, complemented by some virtuoso battle music from Barry Leitch and Dave Rodgers.

Battlecar Marauder will be available on Commodore 64 in early summer.

F.B.I. investigates virus

A virus tht originally attacked Apple computers at NASA is being investigated by the FBI following reports of its discovery at the National Oceanic and Atmospheric Administration, the Apple Federal sales office in Virginia and even the Department of Defense.

Officials are keeping quiet about the exact effect of the virus, but it apears to sit passively occupying system memory – denying its use for other programs – and then reproduces itself.

Detecting the virus is a simple matter, as is removing it. But the tendency of the virus to attach itself to any application program entered on disk, and then copy itself on to any other machine into which the disk is inserted, means that it spreads rapidly through a system.

Hewson's Heathrow

"Echo Charlie 472, you are cleared for decent to 5,000 feet, please prepare for further landing instructions" . . . .

Ding Ding — "This is your Captain speaking, unfortunately there is a slight delay over Heathrow this evening and we will be circling the airport for at least another 30-40 minutes. Please keep your seat belts fastened and adhere to the 'No Smoking' signs."

Because of the recent press coverage of Heathrow Airport and its Air Traffic Control, Hewson have found sales of its realistic Traffic Control Simulator have risen faster than a fleeing jet plane.

It would be your turn to take control of "the bleeps" on the screen and you have got ½ an hour to land one of the many varied types of aircraft, including Concorde.

You can conquer the levels and begin to experience emergency landings, mid air near misses, abortive take offs or radar interference. And feel a controllers real life anguish as aircraft queue to land and no time or fuel, to re-schedule to another airport.

Heathrow Internatinal Air Traffic Control is on

Compunet's Multi-User Game

A major new multi-user game, Federation II, is now available on Compunet. It is set in a future of interstellar commerce and exploration. The player's task is to amass enough money and power to become Emperor, by trading – or less ethical means. Different from traditional multi-user games, Federation II has a fully worked out background with a viable galactic economy.

Players are in full communication with each other in real time in the game, and are competing against each other as well as against market forces. Combines and alliances are already forming.

Compunet is available through over 70 phone numbers through the UK and Eire, so that Federation can usually be reached with a local phone call.

Hand Held Scanner

A hand-held optical scanner is now available from US firm Transimage.

The Transimage 1000 costs £2,500 and reads different fonts and typefaces into a PC with users needing to tell the PC what the font is.

The scanner operates at 40 characters per second (480 words per minute) and consists of a hand-held reading device, PC adaptor board and software.

Debbie Dewhurst, sales executive with UK distributor Technitron Data, said: "There is nothing like it in hand-held technology. You can select either a line or a paragraph of text and it is interactive with the keyboard."

Text is displayed directly on screen and the software includes a spelling checker which works automatically as the text is scanned.

Exocet's Foundation's Waste

A new name in entertainment software, Exocet Software, will be releasing their first Amiga product, Foundation's Waste, shortly.

In Foundation's Waste you take on the role of a space pilot who has been captured by the Federation. You have already attempted to escape six times but, unfortunately, you have always been recaptured. Once again you manage to escape from you cell and make your way to the records office where you find the Federation's dossier on you. This contains a bio-record describing what the Federation has planned for you, and it is obvious that if you do not escape this time, there won't be another chance. Your only means of escape is to "borrow" a Federation space-craft.

Reports have filtered back to the Federation that you have escaped in one of their space-crafts and they have contacted all land and air personnel who are put on top security alert. The action begins over the power plant and takes you through the multiple levels – city level, water level, the wastelands and finally the space level. Can you escape? Only time and experience will tell.

Foundation's Waste on the Amiga will cost at £24.95, Amiga.

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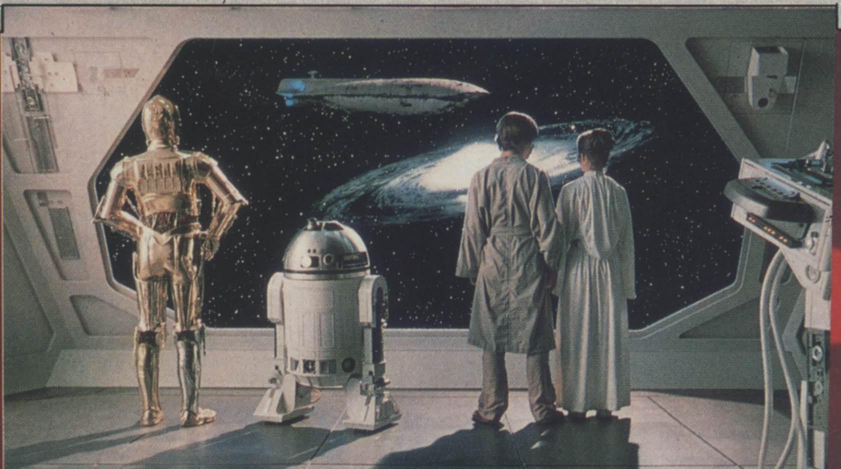
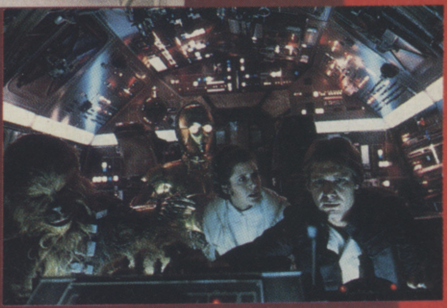




Domark's
Empire Str

The spectacular film tie-ins in which Domark specialises continue . . . and again the force must be with us!!!

The fight against the mighty power of The Empire and the cunningly evil Darth Vader is on once again. Luke Skywalker and his trusty troupe of brave rebels fight their way through the massively successful follow up to Star Wars, The Empire Strikes Back.

Domark's well-received version of Atari's coin-op classic Star Wars is still riding high in the major charts after half a year. The July launch of The Empire Strikes Back could see Luke Skywalker maintain his computerised fame right up to the end of the year and beyond.

ikes Back!

The Goal:

The Empire Strikes Back is a one player game, in which you command Luke Skywalker's snowspeeder vehicle and Han Solo's Millenium Falcon spacecraft. Your main goal is to reach the safety of the huge asteroid. To do this, you must first reach the rebel base on Hoth and escape to the skies.

The Game:

There are four levels of play to reach the huge asteroid. The first level will engage you in a blistering battle on the surface of Hoth. Darth Vader has released thousands of probots in search of the rebel hideout. Your goal, as Luke Skywalker on a snowspeeder is to stop the probots from sending pictures of the rebel's power generator to Darth Vader. Quick thinking and mega fast reactions are needed throughout.

Onto the next level with Luke once agin on his snowspeeder engaging in a spectacular melée against two types of imperial walkers. AT-ST walkers are small but very mobile, and AT-AT walkers are huge and difficult to destroy with blasters. A limited number of tow cables can be fired at AT-AT legs though — helping you to stop them in their tracks. The walkers are advancing towards the rebels power generator, so the race is on to reach the rebel base.

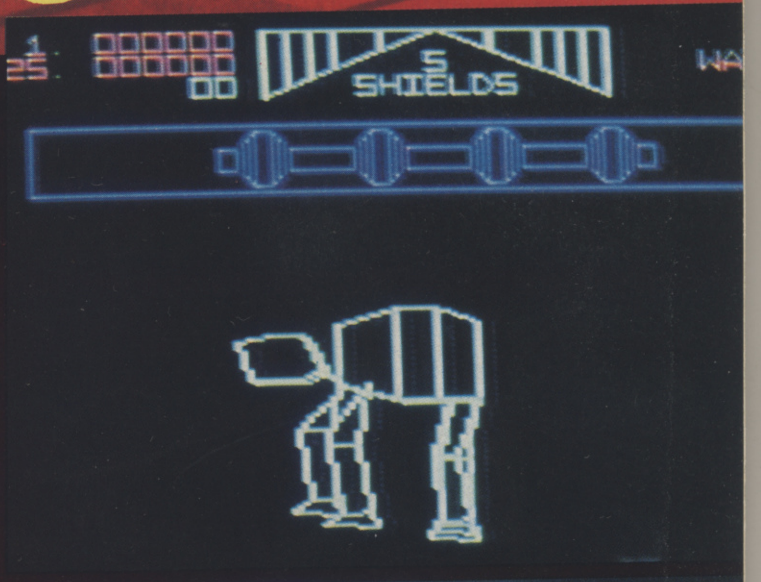
The third level of play sees Han Solo in his Millenium Falcon against a swarm of TIE fighters. If you can survive this attack you will slip into the asteroid belt fury of level four.

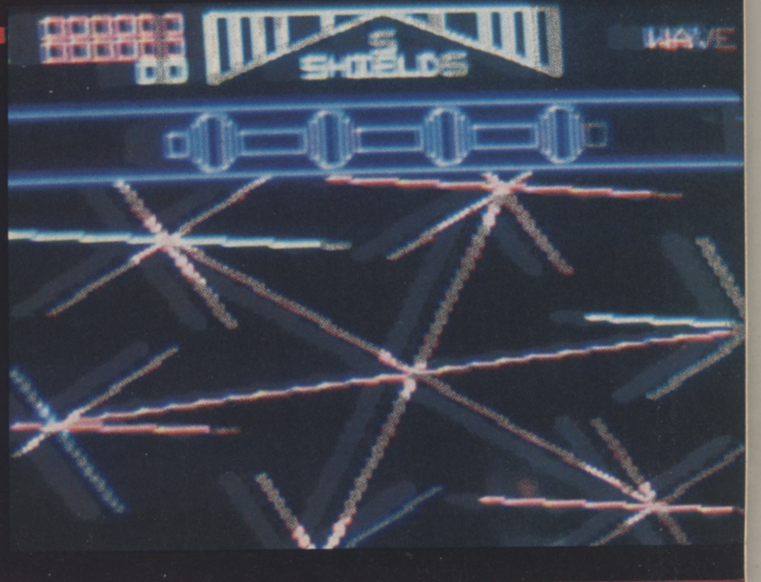
Han Solo in his Millenium Falcon really has a tough task admist a turbulent asteroid field. They must be avoided to reach the safety of the huge asteroid. It won't be easy. To reply on your deflector shields too much could prove fatal you have to avoid every object and every enemy shot at all costs, in order to save your shields, protect yourself and in turn stand a better chance of winning your battle against The Empire.

Additionally, bonus points can be earned for exploding and destroying a certain number of foe targets. A JEDI letter may be awarded along with your bonus points. If you manage to spell out JEDI during your various quests, then for a limited time you are recognised as a true Jedi Knight and are invincible against all Dark Side forces.

Programmed by the same Vektor Grafix team which were responsible for the successful conversion of Star Wars, The Empire Strikes Back takes the player once more through the dynamic adventures of the rebels.

The Commodore 64 version is being programmed by Denny Gallagher. There is also an Amiga version on the way. We hear that early 1989 will see the third installment in the Lucas film series with 'The Return of the Jedi' on which Domark are already working.





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New Power House Releases

The Power House has released five new action games. They are also re-releasing two games, which were originally full priced titles, at £1.99.

Aquarist is a sub-aqua shoot 'em up in which the most technologically advanced submarine in the world is out to conquer terrifying creatures, which are the result of mutated flora and fauna caused by the sea's pollution by alien forces. Obstacles to be overcome abound, such as the aliens' missiles which fire backwards as well as forwards, and the player has to escape depth charges from the Navy who are also trying to clear the ocean. This fast moving game for the Commodore 64 is written by freelance programmer Kevin Stone, who has also written the recently released titles Street Machine and Stairway to Hell for Power House.

Osmium is possibly the most dangerous place in the galaxy, inhabited by the evil fast and accurate Rexillian Blitztroopers. In this intergalactic high speed fight to the death, the player must skim low over the planet surface to fend off the malevolent Rexillians. Osmium for the Commodore was written by programmer Alistair Darren Watts, who is currently working on an arcade game and also wrote Zip for The Power House.

Destruct is a planetary arcade adventure in which the player is forced to fend off attacks by enemy aircraft and guided missiles at the same time as avoiding deadly landscape features. At the end of each level there is a confrontation with a gigantic mothership, which is invulnerable to normal lasers, leaving the player no alternative but to shoot the asteroids that are flying overhead which then reveal crystals that must be collected and used against the mothership. Once the mothership is destroyed the player is met by a friendly alien and is then carried at high speed to the next level. There are over 20 levels of fast action, interlinked by an ingenious section which was written for the 64 by programmer Clark John Denham.

BCII: Grog's Revenge for the Commodore 64, in which Thor has completed the Quest for Tires and must now find the Meaning of Life which is hidden in a maze of mountains joined by bridges. To cross these Thor must pay a toll of 100 clams, which he collects along the way. He must never enter the same screen as the mighty Grog. Thor can plan his route by using the preview screen in the bottom right hand corner of the screen, where he is shown as a square and Grog a diamond. Thor can go to the next level by typing in two numbers in the Warp Cave. In other caves it is pitch black and Thor must use his headlight to avoid stalagmites and pick up clams. This was originally a full-priced title from Sydney Development Corporation in Canada, re-released by The Power House.

Also a re-release of a full priced game from Sydney Development Corporation is Desert Fox for the Commodore in which the player's brief is to outwit the Desert Fox, a cunning foe who knows no fear. All the depots must be saved and if a depot falls to the enemy or if your Damage gauges reach full you will lose. You can also save the Allied Depots from Rommel with the help of on-screen icons, such as Zoom, Radio, Air Strike (which you can call on only once), Swastika, which shows Rommel's position, Tank Status Gauge, which tells you the damage sustained, Convoy which enables you to protect the Allied Convoy, Tiger Tank whereby you can destroy enemy tanks by lining them up in your sights, Ambush which enables you to shoot and escape the Canyon Ambush and Stukas where you can shoot down Stukas which are trying to strafe you.

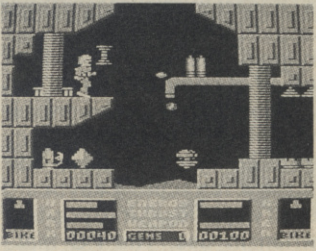
All these Power House games are priced at £1.99.

Blood Brothers for Gremlin

Blood Brothers, the latest from Gremlin, hits the streets shortly. The game is based around two brothers – Hark and Kren. The brothers come from the distant planet Sylonia which is rich in minerals and other natural resources.

In recent times, their planet has been plundered by a hostile race known as the Scorpians. The Scorpians stole a large quantity of precious gems from Sylonia and it is now the responsibility of Hark and Kren to recover them from the Scorpians' storehouse planet – Scorpia.

Scorpia is the ideal place to store ill-gotten gains. It has very sophisticated defence systems which are designed to destroy anything that shouldn't be there. It is up to Hark and Kren to use their utmost skill and determination to recover the gems.



They both have very manoeuvrable Jet-Bikes fitted with laser bolt weapon units. The bikes will help them to travel overland while their thrustpacks and hand-held lasers will be used when they enter the mine. Commodore 64/128K cassette £9.99 and disk £14.99.

CD to Replace Floppies?

Tandy has developed a compact disk which can record and erase many times. The Tandy Thor-CD uses a laser beam to record and erase music, data or video. The resulting disk can be used with all existing CD audio and CD-Rom players. They could provide users with hundreds of megabytes of storage per disk, for less than the price of a music compact disk. As a result Tandy are suggesting floppy disks may, within a few years, be replaced by CD.

Existing optical disks use write-once-read-many (Worm) technology, and cannot be altered once written.

Tandy claims the process does not reduce the high quality of existing optical disks. The first commercial application will be an audio CD player for under £500 within 24 months.

Robert McClure, president of Tandy Electronics, said: "The next likely commercial product is a data storage device, which requires greater precision and error-checking capabilities. Tandy Thor-CD technology will fit well in the high-density storage field, with storage capabilities in hundreds of megabytes per 5-inch disk." These are expected to be sold early in the 1990s.

Digital information is stored on the disk by using a laser beam to create microscopic pits in a light-reflecting surface.

Power House Champion?

The hunt is on to find The Power House games player of the year.

The Power House are inviting you to send details of your highest scores on The Power House games. The individuals who gain the highest score for each game will be invited to the offices in Wimbledon for the grand final in November.

On offer as prizes to each game champion are 20 free games and the overall champion will receive 30 games, plus a top quality Sony personal stereo.

To enter the competition all you potential champions have to do is send photographic evidence of your claimed high scores together with your name and address to Andy Blazdell, The Power House, 204 Worple Road, Wimbledon, London SW20 8PN. Entries must be received by 10th October.

Magnetic Scrolls Accused of Corruption!

Corruption – an adventure for hardened adventurers seems destined to be another best-seller from top programming team Magnetic Scrolls.

Set in the modern day, you'll be plunged headlong into the shark-like world of high finance where commercial intrigue and double dealing are commonplace. Framed by your partner, with the prospect of doing time in jail, the chances of extricating yourself are slim. Then there's the irate drugs baron who's dying to give you a pair of concrete boots. All your skills will be needed to turn the tables on these ruthless criminals, and to survive you're going to have to be at least as devious, if not more so, than the other characters in the game.

Once again, Magnetic Scrolls appear to have come up with a compelling adventure, enhanced by graphics which, they tell us, are even more stunning than Jinxter and The Guild of Thieves.

The puzzles are complex and revolve around the manipulation of other characters and extracting information rather than picking up and finding clever use for a series of objects.

Corruption strips aside the mask of respectability to reveal the deceit, greed and sheer ruthlessness of the software industry – sorry – the financial world!

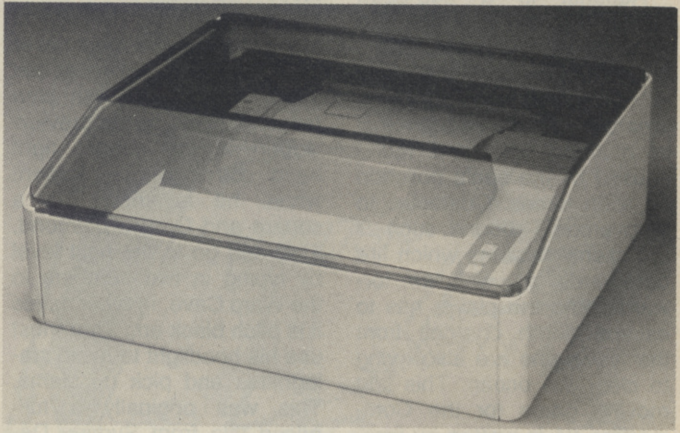
Corruption will be available shortly for Amiga and IBM PC at £24.95.

Quiet Printing

Accodata's new Printer Muffler is claimed to reduce printer noise by as much as 75 to 85 per cent. They are designed for offices where the provision of full silencing cannot be justified – for instance, where the printer is sited in an adjoining room, but is still to some degree audible.

Mufflers for 80-column printers cost £65.00, and 132-column units cost £71.00.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333; Telex 922493 Action G.



Accodata's PC Mates

Accodata's PC Mate Desk and PC Mate Printer Desk bring a change of style to the world of computer furniture.

The PC Mate Desk workstation will accommodate virtually all popular micros, and features a retractable keyboard shelf which locks into position when in use. The PC Mate Desk measures 750mm(H) × 700mm(W) × 500mm(D), and costs £107.00. The deep and shallow extensions cost £34.00 and £29.00 respectively, reduced to £29.90 and £25.90 when supplied with the workstation.

The PC Mate Printer Desk will accommodate all standard 80-column and 132-column micro printers, and is claimed to reduce vibration to a minimum. It can be fitted with one or two paper baskets, for input and/or output; alternatively, a lower basket, which will hold a full box of paper, can be fitted to the base of the stand. The PC Mate Printer Desk costs £89.99, and the paper and lower baskets £23.00 and £19.50 respectively.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx HA0 1WL. Tel: 0800 333 333.

CRL Sends You to Hell and Back

Life in general was pretty quiet in Heaven – that is until the other day when Mephisto sneaked in through the Pearly Gates in disguise and took it upon himself to steal the Ten Commandments, which he then proceeded to hand out to his minions to do with as they pleased. Heaven was in uproar! But then to make matters worse, it was discovered that Archangel Bertram's horn had also been taken. There was only one thing for it. Archangel Bertram would have to journey down to Hell himself and retrieve his horn and the commandments.

In To Hell and Back, the latest C64 release from CRL, you become Archangel Bertram and try to gain access into the Underworld by travelling around the Netherworld – that land between Earth and Hell – retrieving the Ten Commandments. Throughout the graveyard and Netherworld levels you will be challenged by ghosts, zombies and skeletons. When you finally arrive in Hell to fight it out with Mephisto, over your horn, your way is not only barred by giant wolves and snakes, but also Mephisto's gophers! But don't despair, you have your own secret weapon with you – your halo!

In this semi-maze, two-way scrolling game with over 500 screens, no-one is killed – you only stun your attackers and they are transformed into angels and sent back to heaven, which sounds a relief from usual bloodthirsty gameplay.

To Hell and Back, C64 cassette £9.95, disk £14.95.

22 Billion Times a Second!

GTE Laboratories of Waltham, Massachusetts, claims to have set a new world speed record by developing a tiny laser diode able to switch on and off 22bn times a second.

This speed, 22 gigabits per second, is fast enough to allow up to 400 separate video channels to be sent over a single optical fibre. In the future, says the General Telephone and Electronics laboratory, offices and homes will receive telephone, data and picture signals over the same strand of hair-thin cable.

Gremlin's HERCULES

Gremlin are bringing out a classical arcade adventure in which only the truly heroic will have the strength and perseverance to succeed.

Many thousands of years ago in Ancient Greece a son was born to the chief of the Gods Zeus by Akcmene, a mortal. The boy Hercules was hated by Hera, Zues' wife who placed a curse on him. Hercules grew fine and strong, married and had children of his own but his happiness was shortlived. Whilst bewitched by Hera's curse he slayed his children as they slept.

Upon regaining his sense, Hercules was full of remorse and begged to be allowed to expiate his sin. The Gods sent him to the spiteful King of Argos who set Hercules twelve terrible tasks to complete. Armed by the Gods with his bow and arrow, sword and helmet and shield, Hercules set out on his mission . . .

Animation in scenes such as ancient Greek temples and burning kades set the atmosphere for Gremlin's newest game.

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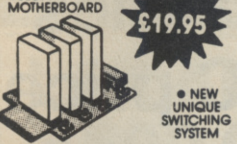

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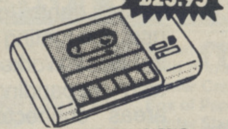

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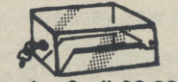

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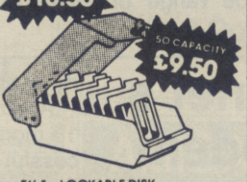

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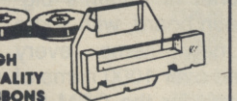

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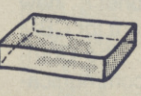

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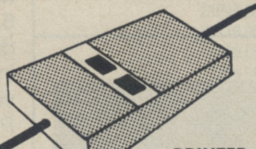

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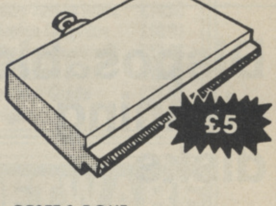

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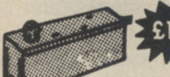

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UK/ Australian Computer Collaboration

Leading UK software publisher, Compsoft, has teamed up with the Australian firm Computer Brokers to develop a new multi-user database system based on the Australian's Multi-T-II and its own Delta program. The result is Delta IV Plus One, a fully integrated two user package which is ready to use without the need for special commands or extra hardware.

Compsoft's flagship product is the Delta package, which has over 40,000 users in the UK. Although the company had already developed a multi-user system of its own in Delta-Net, which can handle up to 32 users, it was looking for a low-cost two-user system which could be applied to all PCs, including the latest generation. They found that Computer Brokers fitted the bill.

Compsoft has already had an association with Sybiz, another Australian company, with whom they signed an agreement for the UK publishing rights for an easy-to-use accounting package called Book Worker. Compsoft is also expanding into other areas connected with data handling and presentation. They are now marketing a new product called Debut which is designed to gather data from a wide range of other software programs and sources for the production of sophisticated reports and graphs.

In addition, Compsoft are publishing in the UK an American software program called NexView which is designed for the consolidation of Lotus 1-2-3 spreadsheets.

Delta IV Plus One will cost £995 plus VAT. Contact: Compsoft Delta. Tel 04868 25925.

Compunet's free modem

Getting on-line is more affordable with Compunet's new offer of a free modem for CBM 64 and 128 users. The Commodore 1200/75 communications modem is free to new subscribers at the privileged 'Gold' level of subscription.

The subscription price of £26.90 (inc P&P) includes a quarter's Gold subscription (£15.00) plus unlimited off-peak connect time. (Off-peak time is 6.00pm to 8am weekdays and all day weekends.)

A similar free modem offer 18 months ago was very successful in introducing thousands of people to the communications experience.

Compunet is Britain's biggest bulletin board, with some 15,000 new items every month and over 1000 items of telesoftware for the CBM 64, 128, and Amiga Compunet other interactive features include the celebrated chat and conferencing systems, Party-Line, and the new multi-user game Federation II.

Contact Compunet: 01-997 2591.

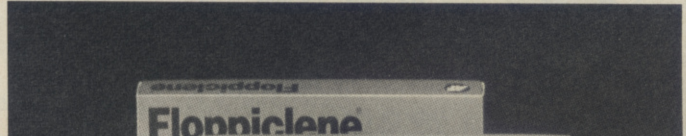
Disposable cleaning disks

A new diskette drive head cleaning system, the AF Floppiclene, features an open-ended jacket for the cleaning disk which allows a fresh disk to be used each time the head is cleaned, preventing any possibility of re-contamination.

Made by Automation Facilities Limited, which specialises in cleaning and maintenance products for the computer and electronics industries, the AF Floppiclene is suitable for both single- or double-sided diskettes.

Unit prices are £16.90 for the 8in drive kit, £15.90 for the 5.25in, and £17.50 for the 3.5in. A refill pack for the 3.5in kit is also available at £9.45.

Contact Actioon Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middlesex, HA0 1WL. Tel: 0800 333 333; Telex: 922493 Action G.



CBM slashes PC price

Commodore's compact PC1 has had its price substantially reduced from £499.99 to £369.99, including mono monitor, Able software and VAT. The move is part of Commodore's aggressive new strategy to increase its share of the PC marketplace.

The PC1 is one of the world's smallest desktop microcomputers with a footprint of just 33×32cm. Its advanced Gate Array technology has been fully utilised to keep the component count down and so simplify the internal architecture, increasing reliability and saving space.

The PC1 uses an 8088 processor running at 4.77MHz. It comes with 512kbytes of RAM (expandable to 640kbytes); MS-DOS 3.2; one internal 5.25" 360kbyte floppy disk drive; serial, parallel and video interfaces; a monochrome video display and a 84 key, PC compatible keyboard.

The Able Software includes a word processor, spreadsheet and database, making the PC1 a highly suitable machine for small business which can easily be expanded.

Commodore's existing range of IBM PC compatibles, the PC 10, 20 and 40, provide the upgrade path for new PC1 users, while Commodore's new PC60 points the way to the next generation of business computing.

Dean Barrett, Commodore's Marketing Manager, commented, "By reducing the price of the PC1 we are aiming to introduce first time users to Commodore's policy of total support to business and encourage their growth."

"The PC1 price cut is just the first step in a series of marketing announcements and product innovations which will be made in the near future. But for the moment our strategy is best summed up as watch this space!".

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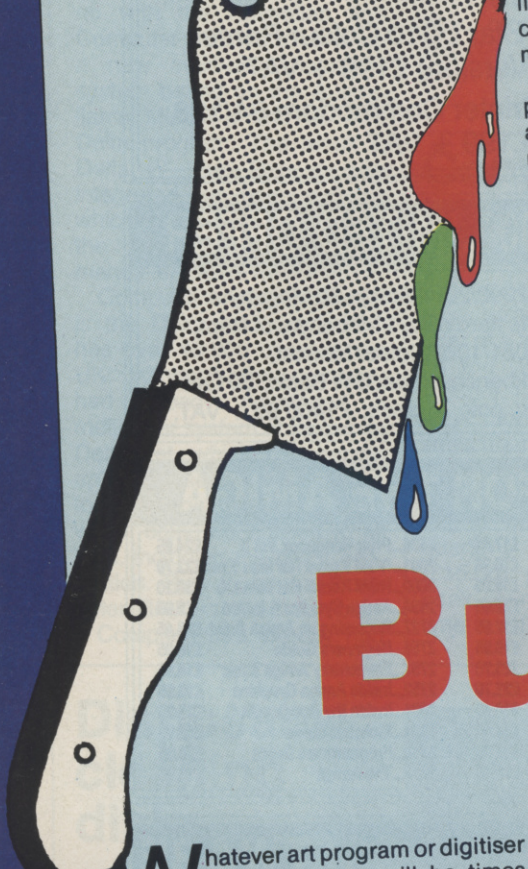


Butcher II

Whatever art program or digitiser you use, there will be times when the result will be not what you wanted. You might need to reduce the number of colours, or even add some to a black and white picture. You may begin to wish you had used low instead of high resolution — or wonder if the work would have looked better if the shapes had had stronger outlines.

Enter Butcher 2.0, a program that simplifies the problems of altering or improving artwork and digitised pictures without having to redraw the original. Butcher 2.0, an enhancement of a program first available last year, is not a paint program. But all who use a paint program or digitiser will find it immensely useful.

The program comes on a single unprotected disk together with a good, well-indexed 57-page manual that explains clearly all of its many functions.

You can use it on any graphic in any resolution that conforms to the standard IFF format, including overscan and pictures larger than the screen. Its main limitation is that the only operation you can carry out on pictures in the HAM mode is to change their resolution.

You can alter the resolution of any picture. This may also change its appearance: the move from low to high resolution will reduce the number of colours used from 32 to 16; from HAM to low will result in a loss of quality; from high to low will effect the number of pixels.

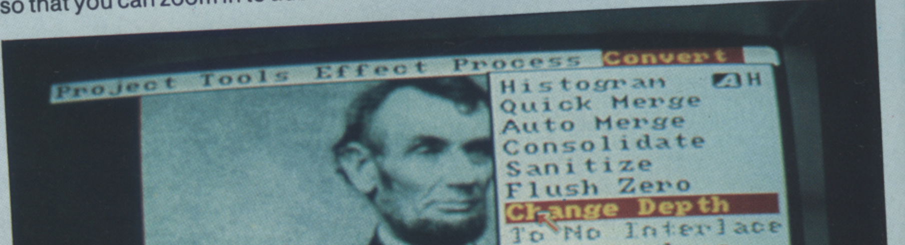
Butcher has a clear and easy-to-use display. You load a picture and then work on it by selecting various operations from pull-down menus. You can use the keyboard instead of the mouse for certain often-used commands.

The program includes a useful graphic toolbox for touching up pictures. It enables you to draw straight or freehand lines, filled and unfilled boxes, ellipses and polygons, and add airbrushing. You can also turn colour cycling on or off, flip the screen horizontally or vertically, and — most importantly — undo any of the changes you make. In any future enhancement of the program, I would like to see a magnification facility added so that you can zoom in to add fine detail to a picture. It is one of the few features that Butcher lacks.

You can hold two pictures in memory, switching between them at the press of a key, which I found useful for keeping the original picture handy while I worked over a copy of it so that I could quickly check the effect of the changes I was making. You can change all or just part of a picture.

Many of Butcher's functions work directly on the palette. You can switch between three different palettes — the one the picture uses and two others so that you can change the palette of any picture to that of another. You can adjust any palette, either one colour at a time or by changing the qualities of all of them by moving two sets of sliders — one covering the Red, Green and Blue mixtures in the colours, the other altering the Hue, Saturation and Value of the palette.

These latter values refer, respectively, to its colour, the purity of the colour, which depends on how much white is mixed with it, and its brightness, which indicates the amount of black mixed with it. You can not only change a palette but return, in most circumstances, to your original setting. By the means of such manipulations you can simplify the



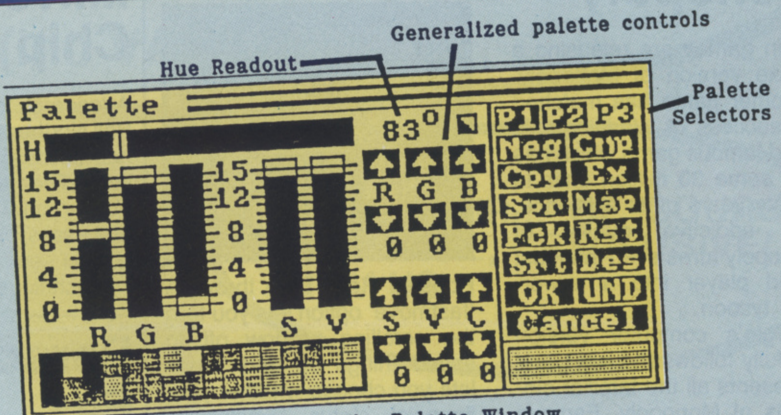
colours — turning all the blues in a picture to one blue, for instance, which is most useful when cleaning up digitised images. Butcher will count the number of pixels drawn in each colour of the palette and display them as a bar chart and then let you merge or change one colour into another. Apart from these changes to the palettes, you can tone a picture, which reduces it to one colour of various intensities, invert the colours, which produces the effect of a negative of the original, create an antique effect by turning the original into a series of faded browns and turn a colour picture into a black and white one.

You can rotate the red, green and blue values of the original which enables you to create some strange effects or add pseudo-colours, which changes the colours to shades of red, green and blue and results in even stranger effects rather like 1960s psychedelia. You can also produce colour separations for camera-ready artwork for conventional printing.

Butcher has some image-processing functions. You can map a graphic, which puts a black edge around its contours so that it looks like a charcoal drawing, or put such edging over the original picture to emphasize its outlines.

Butcher allows you to filter out colours, removing pixels which do not have neighbouring pixels of the same colour, get rid of bit-planes one at a time, and improve the contrast in pictures by using a technique called density slicing.

Butcher will also turn any picture into a half-tone and create a mosaic effect by overlaying on the original a repeating pattern. There are a dozen different mosaic patterns provided, ranging from bricks to splotches — or you can design your own, or create effects that make it look as though you have knitted, or embroidered, your artwork.



The Palette Window

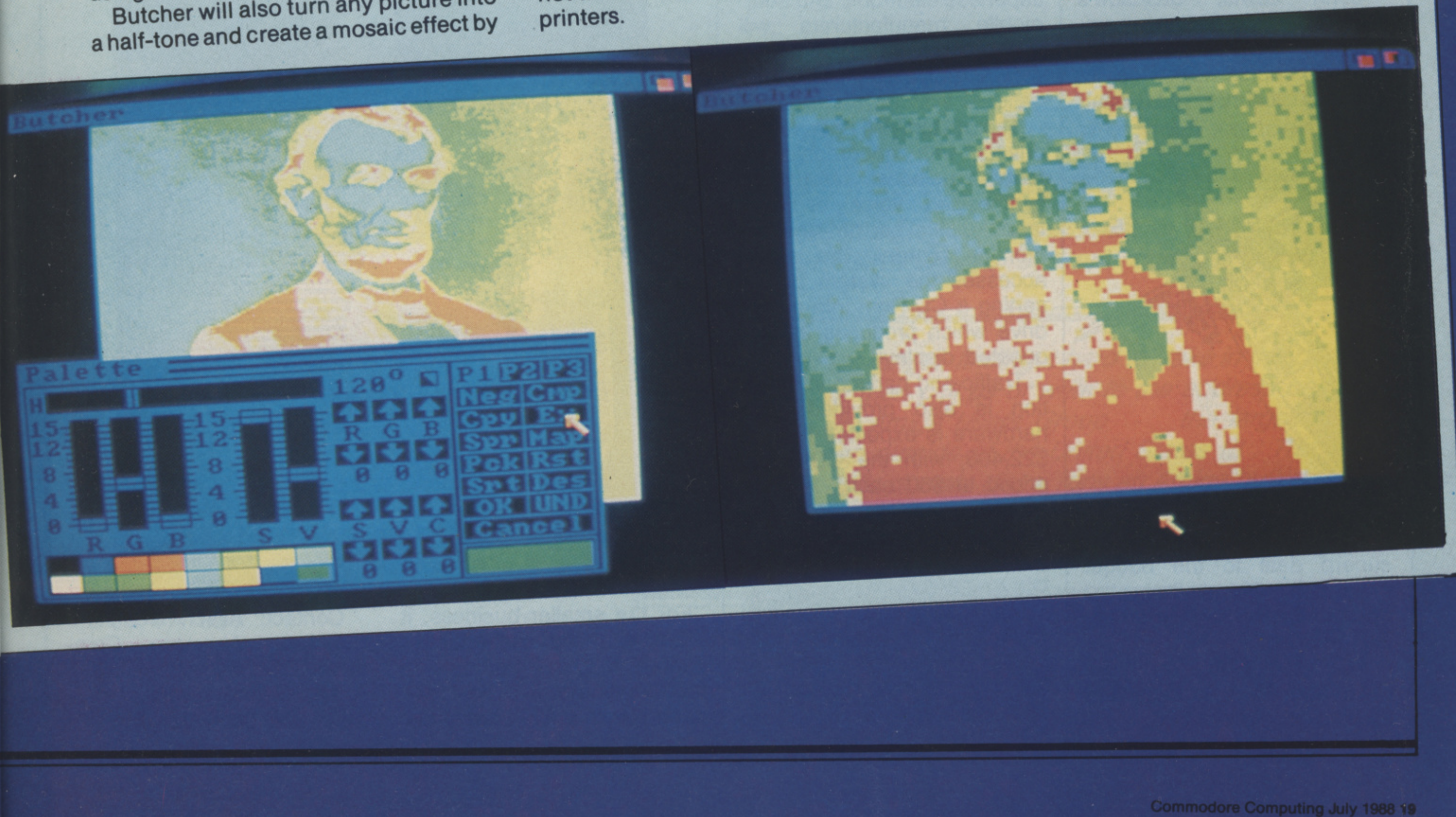
I would not like to be without Butcher. It is an inexpensive and impressive program.

Finally, you can save the result to disk or print it from within the program; printing the whole picture or any rectangular section of it, either in its existing size or in an enlarged version. Butcher uses the Preferences printer drivers, which is perhaps a pity, since they do not take advantage of 24-pin dot-matrix printers.

I would not like to be without Butcher. It is an inexpensive and impressive program, enhancing the capabilities of any paint program or digitiser at a low cost. Butcher encourages you to experiment and create interesting and unusual pictorial effects. For anyone wanting to make the most of the Amiga's graphics potentialities, Butcher is excellent value and very worthwhile purchase.

J.W.

Price: £27.00
(upgrade for Butcher I, £8)
Contact: Amiga Centre Scotland.

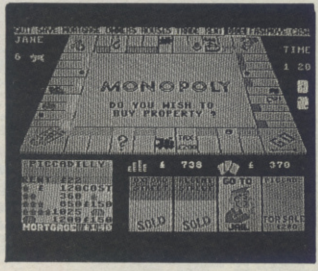


Virgin's new Monopoly

Virgin games are releasing a deluxe version of Monopoly. No other game has matched the success of Waddington's world famous game which has sold some 30 million units in the fity years of its existence. The addictive quality of Monopoly turns even the most placid player into a power-mad tycoon.

Virgin's computer version faithfully follows the rules and represents all the familiar elements of Monopoly. Famous London street names, tokens, Chance and Community Chest. There's a colourful representtaion of the board, a scrolling window shows the route your move is taking. Your token moves around the board. The centre section of the board displays prompts and comments.

A line of functions are initiated by joystick control taking care of Quit, Load and Save, Mortgaging, Property Ownership Status, Trading, Houses, Rent, Dice throw. A 'fastmove' option lets you turn the scrolling window off to speed things up and 'cash' lets you choose whether your financial status remains in view of the screen or becomes a well-kept secret!

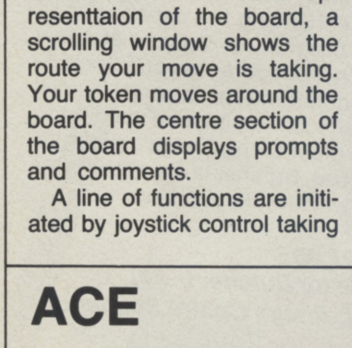


The computer does the banking, arranges the mortgates, calculates the rent (although you have to keep your eyes open and select the 'rent' function when someone lands on your property) and the computer even throws the dice! For C64 £12.95 (c); £15.95 (d).

ACE

Cascade's 'Ace' – which CCI called one of the best simulators we have ever played when it was released at full price now is coming out as a budget title.

John Lewis, Cascade's Director of Operations commented: "ACE has sold over 300,000 copies worldwide, its success cannot be challenged, now we are offering a superb deal to the budget market by giving them the opportunity to buy this amazing product."



ACE is available on C-64, C-16 and Plus 4, cassettes £2.99 and disks £4.99.

Computer Auto-Navigation

An agreement by 39 Japanese electronic and automobile manufacturers will speed up the introduction of a computer-operated car navigational system.

The system will provide car drivers with geographic information, either through a synthesised voice or road maps displayed on a small monitor screen. The driver accesses the system by inserting a CD-Rom into a disk drive which produces the requested displays.

Traffic and parking information is also provided. The hardware is expected to cost $22,400, with the CD-Roms priced at $80 each.

Firms who are jointly developing it include Hitachi, Honda, Mitsubishi and Sony.

Laser Mirrors on Chip

A research team in Canada at Bell Northern Research (BNR) has successfully integrated a laser diode and its drive electronics on to a chip, using processes deyeloped from normal semi-conductor industry techniques.

The chip achieves gigabit speeds and is made from gallium arsenide. The team has fabricated the tiny mirrors needed by the laser, without resorting to the usual process of cleaving the material to obtain flat surfaces. In addition, they have successfully united the differing fabrication techniques needed for transistors and lasers. Bell says the device will lead to cheaper, faster and smaller optical transmitters.

Personal Fax £7.50 per week

Siemens' new HF 2301 fax machine, which has a 'footprint' no larger than a standard A4 page, and weighs only 6kg, is available from Action at a unit price of £1339.00, or for as little as £7.50 per week on a five-year lease rental plan. Cost includes delivery, installation, training, and a second year's free warranty.

"This low-cost and easily portable machine brings fax facilities to a new and wider audience," says Action sales manager Roger Bulkeley. "For the smaller business, it offers a really cost-effective alternative to using an outside facility, where the cost per page transmitted is rarely below £1.30. For the director, handling confidential documents, it can be used with a private line with equal ease in either the office or at home. For the sales executive who travels, it can easily be carried around for sending orders and reports to head office out of hours".

The HF 2301 can be plugged straight into any standard telephone socket, and with only four controls is extremely easy to use. It provides a transmission time of 30 seconds per A4 page.

Features include local copy function, 16 grey shades for transmission and reception of photographs and drawings, automatic contrast control and polling facility with a two-digit password. It has a 30m paper roll, and an alarm warns when paper is running low.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

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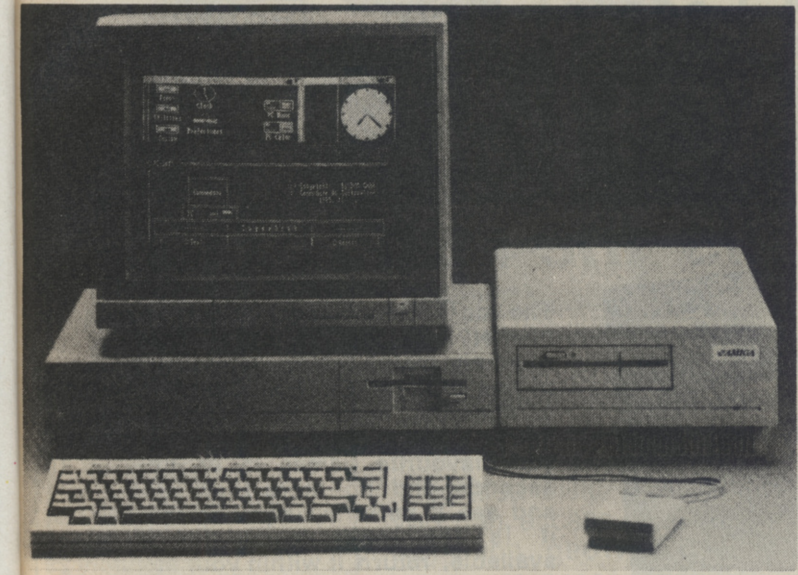

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PC COMPATIBLE A1060 SIDECAR UNIT

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(All keyboards are of French origin and have been converted to UK spec. by Commodore Business Machines (UK.))

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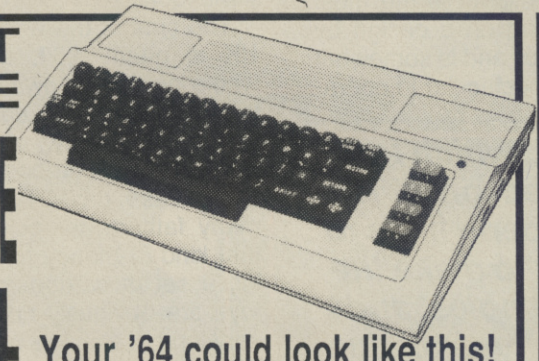

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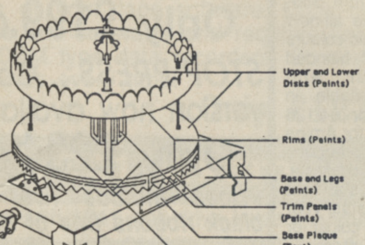
The TOY SHOP

After the PRINT SHOP the TOY SHOP...Peter Richardson takes a look at how Broderbund, capitalising on the success of 'the PRINT SHOP' and its accessory disks, have now released another interesting package.

This is an ambitious range of programs which allows you to print out and customise a series of cardboard models, most of them quite ingenious working ones. As with 'the PRINT SHOP' a good Dot-Matrix Printer is essential, and so is patience, because some of the more ambitious models require 5 sheets of A4 paper to print them out in high-density, high-resolution graphics. On a good dot-matrix printer the detail is wonderful to behold!! The models can be customised to your own taste, and using coloured paper adds a final touch. The program comes complete with self-adhesive card, dowels, wire, balloons and rubber bands, sufficient for the complete set of 20 models, and you may of course supply your own materials for as many models as you wish. It goes without saying that a program of this size is only feasible on a disk, and I doubt if Broderbund even contemplated a cassette version. Anyone intending to use a C64 or C128 for anything more serious than a few games should be saving hard for a second-hand disk drive. Even the larger games and simulations run far better from a disk based on the Starship Enterprise to a very accurate letter balance, with cars, cranes and a working roundabout. I have only built a few of the 20 available, but they certainly do work, and are fun to use. There are three or four flying models which all perform well. The helicraft is the most difficult. It is based on a design by Leonardo Da Vinci, and is somewhat fragile, but it is spectacular in operation. The letter balance deserves making in some material more permanent than cardboard, but works well and with care should last a fair time.



Customization Options

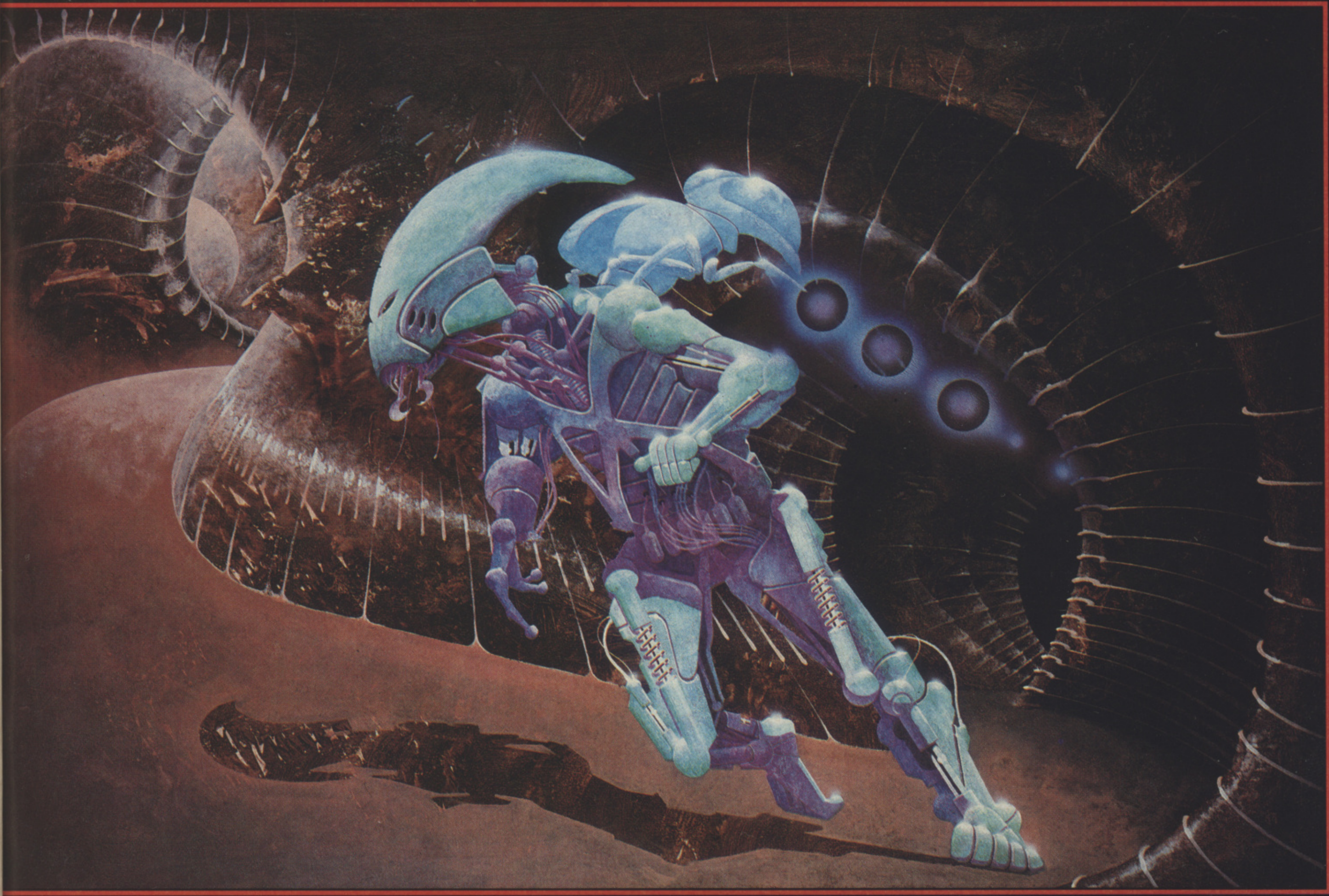
> ***'You are told which tools you will need, on which side of the bend lines to score, how to make the necessary holes, and even which type of glue to use where, or perhaps even more important, which type of glue NOT to use where.'***

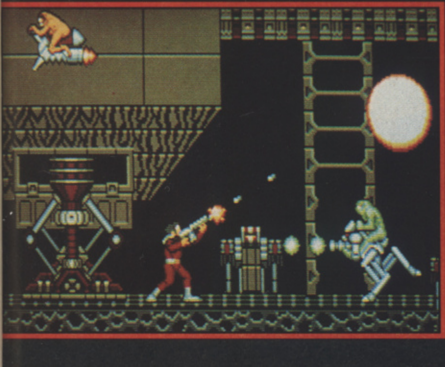
It is difficult to define precisely the age range at which they are aimed. The models are graded from 'very easy' to 'challenging' and I would imagine that Dad's help would definitely be required for some of these. Since Dad might be required for the printing, it is presumably designed to be a co-operative effort. It could be a useful introduction to the use of a computer. I must say, however, that I have never seen such a carefully worked out book of instructions. Someone with experience and patience has obviously been through every step of construction and testing. You are told which tools you will need, on which side of the bend lines to score, how to make the necessary holes, and even which type of glue to use where, or perhaps even more important, which type of glue NOT to use where. Much is made of 'exploded' drawings to show how joints are made, and you are talked through every last detail of assembly. If only computer manuals were of the same quality!

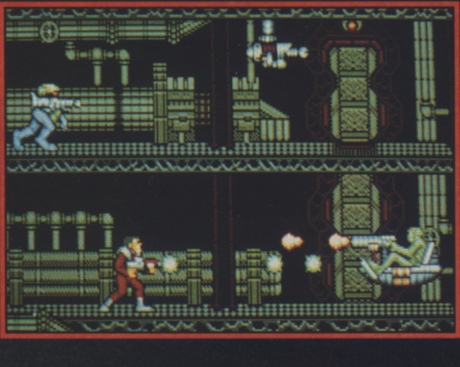
The cost of the whole outfit in the UK is nearly £50, and while the whole product shows its class even in the beautiful packaging in the kind of strong, glossy, photographically printed hard cardboard box rarely seen these days, I query whether many fathers are going to fork out that kind of money for what is, after all, a set of cardboard toys. These toys are obviously not going to last very long in a child's hand, and while they can be constructed again from new, many children would not feel that the more complex ones are worth a second construction session once the novelty has worn off. £25 perhaps, or even thirty might be a fairer price, considering the hours of pleasure it could give in the right hands, and the encouragement it gives for the development of skills. Money aside, this is a very interesting collection. It will not have the widespread appeal and utility of the Print Shop, which is now a classic, but would make an excellent Christmas or Birthday present, but only if he has a Commodore 64 with disk drive, and has, or can borrow, a printer.

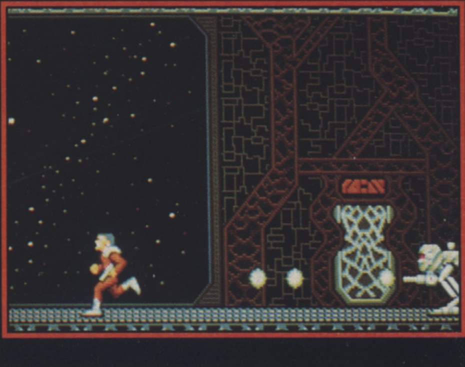
P.R.

OBLITERATOR









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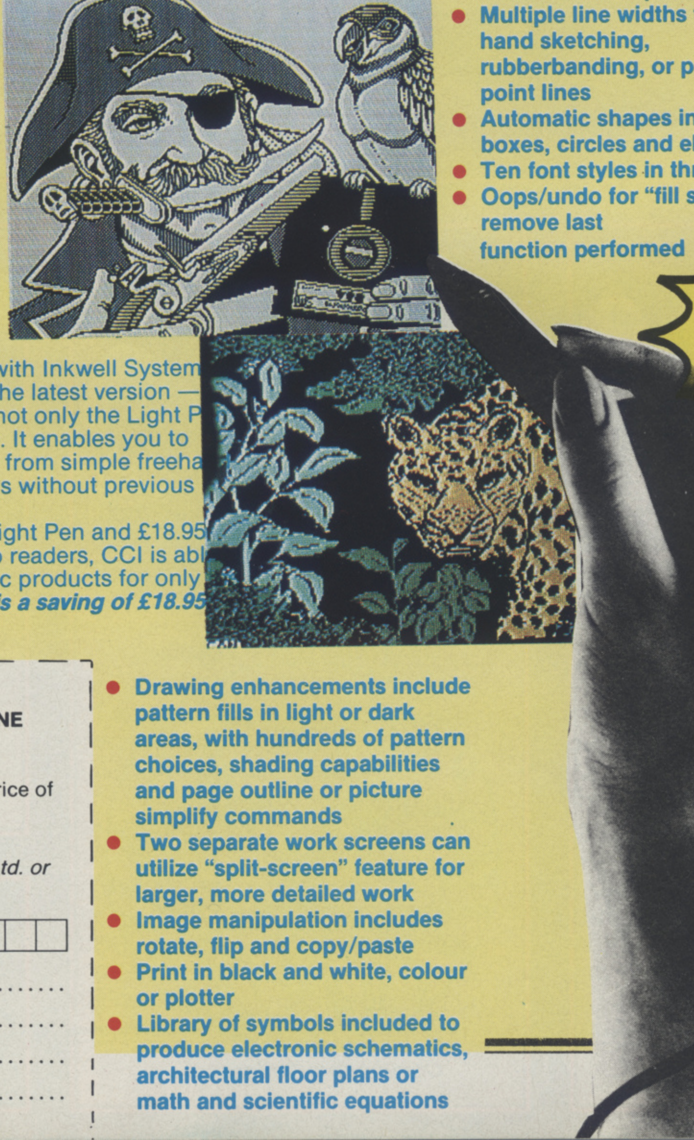

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CCI

Micronet — a new look

Micronet. Okay, so you have read the book, seen the movie. True, Micronet has been around for five years now. True, it is still on Prestel's viewdata system. But, say Telempa any similarities between Micronet today and the Micronet of yore end there. Five years of growth, technology, new services and the magazine's recent relaunch mean that perhaps it is time to take a new look at what the service has to offer.

Felicity Thorpe, Telemap's Consumer Services Product Manager.

Micronet was launched on 1st March 1983, and consisted of news (an average of one story per day), hints and tips, and databases for the Spectrum BBC, and Commodore 64 – a lot less than the 35,000 frames of information that the service puts out today. It's also the biggest Information Provider (IP to the initiated) on Prestel, and now has 25,000 users.

As the most successful service of its kind in Europe as well as the UK, why bother with the trouble of a new look when you are leading the pack? Felicity Thorpe, Telemap Group's product manager responsible for Micronet explains: "We're number one and we intend to stay there. The new look will take Micronet into the 1990's."

The changes, we are told, include an enhanced daily news service, and new on-line magazines for the Commodore Amiga, Atari ST and PC compatibles to add to the existing ones. Each magazine will now be published once a week on specific days, so if you have an Amiga, for example, you will be able to log on every Thursday for a brand new issue of the Amiga information.

But what do these changes really mean, and how will they affect the average Micronet subscriber?

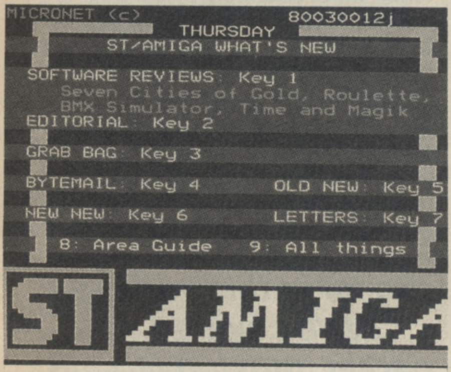
First, the news. Micronet's daily news service has long enjoyed a high reputation, with its team of journalists desperate to get a 'scoop' before anyone else. The Micronet news team has often scored some notable coups and its 'enhancement' should mean more hardhitting coverage.

The new information sections for the Commodore Amiga, Atari ST and PC compatibles seem obvious in view of the growing popularity of these machines. As for the weekly update; this might not be welcomed by people who log on every night to browse around for what has gone up that day, although Micronet's answer to this criticism is that there is still plenty of daily users to read. But it makes sense for those who use it less frequently to know that on a certain day at a certain time there will be a brand new issue of your micro magazine, ready to read when you want to. A month's previous information is also stored, along with selected highlights, and with news, reviews, hints, tips, features, letters and micro-specific chatlines there is a lot to get through.

We can se how far Micronet has changed in five years if we take a look at some of its other services, few of which existed in the seemingly distant past when Micronet first began.

Free programs

The Telesoftware service enables you to download software directly into your computer. There are new programs available every week, including commercial titles available in the shops, and some programs specially commissioned for Micronet users. Around half the software, which covers a wide range of games, utilities etc., is free, with the rest available at a discount of around 15%, and sometimes more. The Commodore 64 seems to get particularly good treatment.



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MICRONET (c)                    80030012j
                THURSDAY
         ST/AMIGA WHAT'S NEW

 SOFTWARE REVIEWS: Key 1
    Seven Cities of Gold, Roulette,
    BMX Simulator, Time and Magik
 EDITORIAL: Key 2

 GRAB BAG: Key 3

 BYTEMAIL: Key 4            OLD NEW: Key 5

 NEW NEW: Key 6             LETTERS: Key 7

   8: Area Guide    9: All things
```

Bytemail, Micronet's mail order service, is another inducement to laziness. Containing the latest software titles for Commodores among others, as well as hardware (such as joysticks, interfaces and so on) it saves you the hassle of going to your local computer shop. There are some good discounts too. You just order from your keyboard, quoting your credit card number, and the goods will be despatched.

Your subscription includes access to electronic mail. This lets you send messages or letters to any other subscriber in seconds, rather than the days it takes Her Majesty's Mail – ideal for journalists close to their deadlines! – and the recipient will be informed next time they log on. The Micronet subscription also includes access to Telecom Gold, generally regarded as possibly the best e-mail system in the business, which gives you access to over 100,000 subscribers. A Telecom Gold subscription (which normally costs £40.00 to register and £5.00 a month thereafter) is part of a service whose annual subscription is £66.00! You can also turn your home computer into a telex terminal (giving access to over 2 million users around the world) by subscribing to the Net. All they need now is a fax. . .

And for the lighter side of life, there's Xtra!, Micronet's leisure magazine, which covers most things non micro-specific. The area has been expanded over recent months and now includes a couple of technical masterpieces which use the interactivity of the medium to the full.

The first of these is Shades, and considered by many who play it to be the ultimate adventure game. Unlike the myriad ordinary adventure games available in the shops, you are no longer playing against a computer, but with lots of other people whose decisions will affect your progress. The game involves the development of your persona, as well as accumulating enough points to achieve the hallowed status of wizard, or witch. This smacked of sexism to me, because I have always thought 'wizard' sounds more powerful than 'witch', but as you can be male or female on Shades, it does not really make any difference. It can be rather daunting as a newcomer entering this world of castles and buried treasure, especially when players higher up the scale try to kill you all the time! But fortunately Micronet has introduced a helper system whereby new players can have a mentor who will guide them through until they've got the hang of things.

Starnet is another multi-user game, this time set in the 21st century. Here, in a universe of galactic battleships your aim is to become a star captain fighting to overthrow the emporer, in order to have the universe in your grasp. Both Shades and Starnet have their own guides, news and chatlines so you can keep up with what's going on, and make friends (or enemies) on line. It is worth pointing out that Starnet is similar to a play by mail (electronic mail) games, while Shades is real time.

A development of the chatline facility is TeleTalk, a teleconferencing system which has aroused considerable excitement in the world of communications. In case you did not read about it recently, it is like a conference centre on computer, with a reception area and 30 rooms. You can chat to people in the general reception area, hire a room (at no extra charge) to talk privately to friends, or arrange your own conference, which you can advertise on the noticeboard. The service is easy to use, with logical commands for all functions, so that getting from one place to another is simply a matter of typing in an instruction like GOTO RECEPTION. Once you are in a room with other people you can either speak to one person by typing 'TELL' or 'WHISPER' followed by your message, or proclaim your thoughts to everyone by typing SAY. As the keyholder you can decide who can enter and who can't, and if someone is being particularly obnoxious, you can even EJECT them from the meeting! Up to 64 people can be 'in conference' together at any one time, although sixty-four people trying to say their piece about anything from politics to pop could get a bit much! If you want to talk in private you can always hire your own room – ideal for a good gossip or that all important business deal.

There is more for financial whizz-kids than just the chance to talk in private. "Money Xtra" is Micronet's consumer and personal finance area, and contains advice about investment, share prices, taxation – even the latest DHSS legislation is explained (I always thought that was impossible). 'Legal Eagle' and 'Tax Fax' use the immediacy of the medium to help with your legal and taxation problems – you just send in your question and it could be answered in less than twenty four hours. Whether you want a mortgage or to set up in business, you should find help in Money Xtra. In fact, with Prestel's home banking service, you can control your Royal Bank of Scotland account from your keyboard. This service does cost £5 per month extra, so it could work out expensive unless you have some savings. If this is the case, the extra interest gained by juggling your accounts around should more than cover the cost.

If you prefer quizzes and competitions, there are plenty in the '20th Century Hamster', most with cash prizes. A new addition is 'Theme Park' where you will find a feature about a subject, such as snooker, followed by a prize quiz. 'Celebrity Chatline' enables you to interview a celebrity by sending in your own questions which are then answered in the form of an interview. Past guests have included Sir Clive Sinclair, Bill Oddie, Douglas Adams and

continued on page 111

WRITING YOUR ADVENTURE

WRAPPING IT ALL UP

Peter Gerrard ties up the loose ends of adventure writing, rejects 'Examine All' and explains how he writes his own adventures...

The use of the word ALL (as in GET ALL and DROP ALL) seems to be taken for granted in adventures these days, so, having covered DROP last month, for the first half of this last article in the adventure writing series we will be looking at GET. No other verbs will be covered, rude or otherwise, since I refuse to break new ground and be the first adventurer to have an EXAMINE ALL routine . . . don't all write in at once!

The essence of the GET or TAKE command is that you are attempting to take possession of an object. In the average adventure game there will be many objects that can be carried about by the player, but equally so there will be many that cannot, for one reason or another.

Perhaps they are too heavy, or they are just intended to be part of the scenery and to help in setting the scene for the player. One would not expect to be able to carry a mountain, for example. Thus our GET ALL routine needs to consider this. Do we slavishly go through every object at every location? Like this, for example:

Mountain – You can't carry the mountain.
Flashlight – Taken.
Rucksack – Taken.
Troll – You cannot possibly take the troll.

Or do we use a bit of common sense and ignore those objects that cannot be carried anyway? We opt for using common sense. Apart from the obvious fact that it makes the programming easier, and also makes it take up less memory, I am sure it would be an irritant to the player if they had to wade through vast reams of text every time they entered a GET ALL command, just to findout what they had actually managed to pick up.

Of course, one cannot just have a GET ALL and ignore the individual command GET <object>, so we will start with the latter example first and build up from there.

If you look at figure one you will see a fairly conventional GET <object> routine, but in order to make sense of it (as was the case with the DROP command last month) you will need to know a few things about the variables being used, and about the game itself.

The example listing is taken, albeit in slightly amended form for clarity, from the same game as the DROP routine, but just to refresh your memory if na=24 then we are talking about the 24th noun word (TENNIS) and if na=26 then we are referring to the 26th noun word (RACKET). As both of these refer to the same thing, and two words are used only as a convenience to the player, then if the word TENNIS was entered we convert it into the word RACKET, since the game itself always refers to object number 26 in preference to object number 24.

Another familiar object is object number 61, the guide dog, which allows the player to move through the cave network section of the game without the usual tedium of finding a light source. There is a flashlight in the game, but it is only there as a diversion: it does not work, and it never will work, but it might irritate a few players as they search endlessly for some way of repairing it!

An unfamiliar one, not given special treatment in the DROP routine is object number 12. This is a stout stick, and has two purposes in the game. One is to play pool with before the player cuts it in two with his knife, and the other is to wedge open a grate that continually falls shut if anyone attempts to go under it without first wedging it with something. Thus if the player gets the stick whilst it is in the location with the grate and is being used to wedge it, then the grate falls shut with a clang.

Finally, we have object number 31, who can be found in locations 12 to 17. I say who rather than which, because object number 31 is a person rather than a thing. It is our old friend Legolas the elf, but as the game progresses the valiant elf plays increasingly frequent visits to locations 12 to 17. These are areas of a pub, so sadly Legolas rapidly degenerates into Legless the elf, and as someone pointed out it would be nice to have a response for someone typing in GET LEGLESS! An advertisement for my local pub seemed reasonable, so that is what message 198 in line 2451 is all about. The variable 11 is used to keep track of the elf's visits to the pub, and he is switched from Legolas to Legless after he has had six drinks.

Line 2452 now becomes self-apparent, while line 2454 caters for the possibility of the player trying to get an object that he is already carrying. If the object's current value is −1 then this is indeed the case, and we use message 152 and the routine at 5995 to inform him of this fact.

Line 2456 has not been included in its original version, because to do so would necessitate many paragraphs of explanation. It is a long list of IF NA=1 OR NA=2 OR etc., naming all the objects which, for one reason or another, cannot possibly be carried by the player: mountains, trolls, that sort of thing.

Line 2458 is another special one, because it handles the situation of the player trying to get something on the ground when the variable ct has been set. This indicates that the player is currently half way up a tree, and message 134 is a sarcastic one about the problems involved in reaching the object when you're twenty feet off the ground.

> ***'So far in this series we have covered the parser, moving around, entering verbs, talking to characters, and the use of the ALL word.'***

In line 2460 we check to see that the object is actually in the same location as the player. If its value is not equal to cp, the current position of the player, then it is not in the location, so we just print up a simple message to that effect and return to our control line, line 10.

In line 2462 we deal with the guide dog. The variable db is used to see if the dog has been given a bone. If he has not, then he is unlikely to co-operate, because he is hungry, fed up, and mean. But, if he has (a loathsome pun gives you a bone of contention, which you can then give to the dog: it is a strange game!) then the pitch dark variable pd is set to zero, the lights on variable lo is set to one, meaning that we can now traverse the dark locations of the game. A simple message about the dog is then printed up, before we put it in the player's possession and increment the number of objects being carried variable, zz. Why zz? I have not the faintest idea, just a whim.

Line 2464 then sorts out the player trying to get the dog before he has given it a bone, while line 2466 concerns itself with the stick, location 3 (where the grate is), and whether or not the grate has been wedged (gw=1 indicating that it has). All this being so then we reset the open grate variable og to zero, print a message about the gate falling shut, and cut off the route south from location 3.

Line 2468 checks to see how many objects are being carried. If the current number is less than 4 then we simply add the object to the player's crop of goodies, tell him that this is what we have done, increment the number of objects being carried variable, zz, and return to our control line 10. However, if the player is carrying more than this then as he attempts to pick up the new object he proceeds to fumble about and drop one of the other ones, which is what the routine in lines 2470 and 2474 is all about. The first object that the player is found to be carried is dropped to the floor, after message number 61 has been printed up (something about fumbling and dropping something), then in line 2474 we allow the player to get the object that he was after in the first place.

Finally, we retreat from the routine in line 2476. Simple? Mais oui!

GET ALL takes much the same sort of form, but first of all we must re-enter line 2450 as shown. This then takes us off to line 2480, and from lines 2480 to 2496 of Figure Two we are concerned with trying to GET ALL the objects in sight.

Line 2480 sets up our loop to start going through each of the objects in turn (there being nn of them), and in line 2482 we ensure that if an object is already being held then we merely continue around the loop. Similarly, in line 2483, if an object is not in the player's current location then we ignore it and carry on with the next step of the loop.

In the next few lines we deal with all those objects that the player cannot possibly get, and our special ones: the stout stick and the guide dog. Finally, in lines 2492 and 2494 we have the routine for working out which object gets dropped when the player is attempting to pick up more than he can actually carry. This could, of course, result in many messages being printed up about objects being fumbled and dropped to the ground, but if it is good enough for Infocom then it is good enough for me

And that is one, relatively straightforward, way of performing a GET ALL routine. You may care to amend it to include something along the lines of "There isn't anything here to get", just in case a player might hopefully try and get everything when there is nothing there.

Having gone this far with the programming we are now going to bring that section of things to a close. So far in this series we have covered the parser, moving around, entering verbs, talking to characters, and the use of the ALL word. This is just about everything that you will need when writing your own adventures. Admittedly text compression has not played a part, but if you are going to be hauling files in from disk then this does not really matter. No graphics? I am not an artist, and plenty of packages exist that will allow you to design a picture and then save it as a file to be loaded into another program: your adventure, in this case.

Several times we have diverted ourselves from programming to look at such topics as getting the ideas for your games in the first place, and items about the importance of characters in your games. Multi-character adventures seem to be in vogue at present, with Infocom's splendid Cut Throats and Level 9's latest efforts both showing many different characters within the one game. However, to round things off, we will finish with a look at one or two things about what to do when you've completed your game. Where do you send it? Indeed, do you do any programming at all and just send off a finished games design?

> ***'Someone I spoke to recently told me that they did not have time to play other adventures, they were too busy designing their own. Rubbish! If you don't keep an eye on the market you will never succeed.'***

In my early days of adventure writing (and I have written about eleven by now, although only eight have ever seen the light of day), I used to do everything myself, with just two exceptions. These were the two games that formed the single package known as The Odyssey and a one-off (and as yet unreleased) game called The Sign of Four. For these my brother Mike did the games design and I just concentrated on the programming.

This latter arrangement worked well for the games in question. At the time brother Mike was (and probably still is!) the more literary gifted of us, while I was the better programmer, and so it made sense for him to put together all the room descriptions and map out the problems while I concentrated my efforts on fitting it all into a Commodore 64, thus ensuring the wrath of my brother when some of his reams of wonderful text had to be left out.

However, as time has progressed it has become increasingly obvious that the one man or one woman adventure team is going to be very lucky to get a successful and profitable game released onto the market. Apart from the very expensive costs of advertising the thing, people who produce home grown games, however good they may be, are not going to get rich from them unless a much larger company takes an interest and then takes the game over.

And, as computers get bigger and the facilities available to the home user increase dramatically, remembering all the while that it is the home user who is going to be purchasing the adventure game in the first place, it is very difficult for any one person to be all-knowledgeable about the specific computer. Some people will be better gifted with graphics (and the distributors tell us that we want graphics in adventures), others will be blessed with an ear for sound, while a third type of programmer may be able to coax a performance out of a disk drive that would leave others floundering. It makes sense to combine individual talents to produce a collective game.

What, then, is the point of a series of articles about writing adventures? Apart from instilling a few ideas, it is a good thing to know what is involved in putting together an adventure, and to gain some insight into just what a computer is capable of doing, or not doing, as the case may be. And, who knows, the talented individual may still rise to the surface.

Knowing the component parts that go together to make up an adventure is very important. It is no use submitting a design for a game if it is totally impossible to implement on anything currently available to the average home user. Know the limitations of your computer! And, know what other people are producing as well. Someone I spoke to recently told me that they did not have time to play other adventures, they were too busy designing their own. Rubbish! If you do not keep an eye on the market you will never succeed. Keep going, Andy Moss.

Nowadays I do very little programming with adventures and concentrate my efforts in designing games for other people (hopefully!) to program. Even now, though, I am working with a second person. Her name might be familiar to some of you, Sandra Sharkey, ex-editor of Adventure Probe. She tends to get the initial idea, I produce the first, very rough, story line, she produces most of the problems, and I do the majority of the writing of room descriptions and messages that are required during the playing of the game. This method works well, and the two of us combined produce games that are (we think) far better than anything that either of us could do individually. Two people working on an adventure tend to spark each other off and to come up with totally different and original ideas, and if there is one thing that companies are looking for right now then it is ideas that are different enough to stand out from the crowd.

But whether you produce the finished game yourself, or send it off to a company as a typewritten game design, one thing remains the same: waiting to see what has happened. Oh, the hours, days,

continued on next page

spent waiting for a telephone call or a letter. It will be worth it in the end, you tell yourself. So far, for us at least, things are looking good.

Well, that's it as far as me, producing and writing adventure games, and CCI are concerned. But don't cheer yet, I'm not going away. Next month should see the start of another series of articles, closely related to adventure writing, and here we shall be dealing with artificial intelligence. What else is an adventure game but a prime example of a computer attempting to mimic an intelligent dungeon master? Bye for now!

P.G.

Figure One

```
2450 REM INITIAL GET ROUTINE
2451 IF (CP>11 AND CP<18) AND NA=31 AND
LL>6 THEN MESS=198:GOTO 5995
2452 IF NA=24 THEN NA=26
2454 IF OB%(NA)=-1 THEN MESS=152:GOTO 59
95
2456 REM OBJECT NUMBERS THAT CANNOT BE T
AKEN: TROLLS, THAT SORT OF THING
2458 IF CT=1 AND OB%(NA)=CP THEN MESS=13
4:GOTO 5995
2460 IF OB%(NA)<>CP THEN PRINT"I can't s
ee that.":GOTO 10
2462 IF NA=61 AND DB=1 THEN PD=0:LO=1:PR
INT"The dog follows you.":OB%(61)=-1:ZZ=
ZZ+1:GOTO 10
2464 IF NA=61 THEN MESS=204:GOTO 5995
2466 IF NA=12 AND CP=3 AND GW=1 THEN MES
S=60:OG=0:GOSUB 5990:GW=0:P%(3,2)=0
2468 IF ZZ<4 THEN PRINT"Okay, "OB$(NA)"
taken.":ZZ=ZZ+1:OB%(NA)=-1:GOTO 10
2470 MESS=61:GOSUB 5990:FOR I=1 TO NN:IF
 OB%(I)=-1 THEN OB%(I)=CP:GOTO 2474
2472 NEXT
2474 OB%(NA)=-1
2476 GOTO 10
```

Figure Two

```
2450 IF NA$="all" THEN 2480
2480 FOR I=1 TO NN
2482 IF OB%(I)=-1 THEN 2498
2483 IF OB%(I)<>CP THEN 2498
2484 REM OBJECT NUMBERS THAT CANNOT BE T
AKEN: TROLLS, THAT SORT OF THING
2485 IF I=12 AND CP=3 AND GW=1 THEN MESS
=60:OG=0:GOSUB 5990:GW=0:P%(3,2)=0
2486 IF I=61 AND DB=1 THEN PD=0:LO=1:PRI
NT "The dog follows you.":ZZ=ZZ+1:GOTO 2
496
2488 IF I=61 THEN MESS=204:GOSUB 5990:GO
TO 2498
2490 IF ZZ<4 THEN PRINT "Okay, "OB$(I)"
taken.":ZZ=ZZ+1:OB%(I)=-1:GOTO 2498
2492 MESS=61:GOSUB 5990:FOR J=1 TO NN:IF
 OB%(J)=-1 THEN OB%(J)=CP:GOTO 2496
2494 NEXT j
2496 OB%(I)=-1
2498 NEXT I:GOTO 10
```

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Adventure!

ADVENTURERS COME AND ADVENTURERS GO: THEY WIN SOME BATTLES AND LOSE SOME BATTLES, BUT COME WHAT MAY ANDY MOSS BANKS ANOTHER COLUMN!

COMMENT

Remember how I sung the praises of Gauntlet, and owned up to the fact that I actually enjoyed an arcade game? Well, my friends, Gauntlet has a successor by the name of DEMON STALKERS from Electronic Arts. It is at first glance a seemingly direct rip off of its more illustrious predecessor, but after close inspection, I can report that it is in fact a much better offering all together. Not only do you have an ultimate goal, that of defeating the actual Demon himself on level 100, but in order to progress to the deeper dungeons you need to crack the mystic code (provided in the package) before the exits become accessible. Add to this a built-in dungeon construction set with over 200 design options, and you have a release of real quality that puts Gauntlet firmly in its place. I played Demon Stalkers for many an hour and firmly suggest you follow suit.

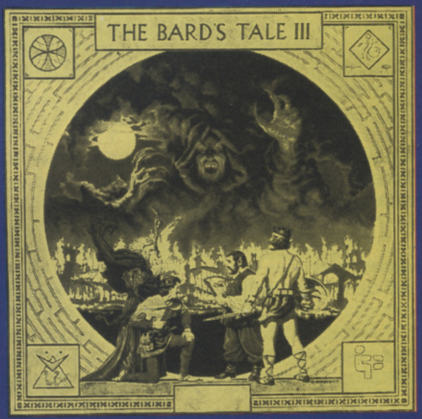
On to this month, and what a busy one it has been. First there was the Cinemaware launch where I had the pleasure of a picture and a chat (again) with Bob Jacob (the camera took my better side!) and a look at Rocket Ranger and Three Stooges. Some great action there I can promise you. After that, I attended a meeting of my local Adventurers club, who asked me to speak about some of my favourite adventures, and I must say it was good to talk to some fellow heroes and have a drink or two. I have spent the better part of two weeks getting to grips with QUESTRON II to give you a thorough review, and finally bumped into (literally) page three girl Corinne Russell at yet another press lunch, which did nothing for my "me Tarzan her Jane" joke, but that's another story!

This month we have part 3 in the Bards Tale solution, and some interesting games to review, so without more ado, on to the news.

ADVENTURE NEWS

BARDS TALE III

Electronic Arts have announced the release of Bards Tale III: Thief of Fate, the third in the award-winning series of role-playing games from Interplay Productions. As is the wont of most sequels, it has been improved with more spells, more monsters and more dungeon levels, and is faster to boot. Your party can also be made up of male and female characters, in up to 13 classes moving through 7 different dimensions, whilst battling with over 500 monsters, some of which can join the party. The plot centres on the evil Mangars' (you killed him in Bards II) master, Mad Dog Tarjan, who is thirsty for revenge. He has reduced Scara Brae to rubble and is threatening to destroy many others in his wake. Your mission is to assemble a group of hardy adventurers and search for Tarjan. Apparently, as the title suggests, some characters are the key to your survival, so the right mix is essential. A full review will follow.



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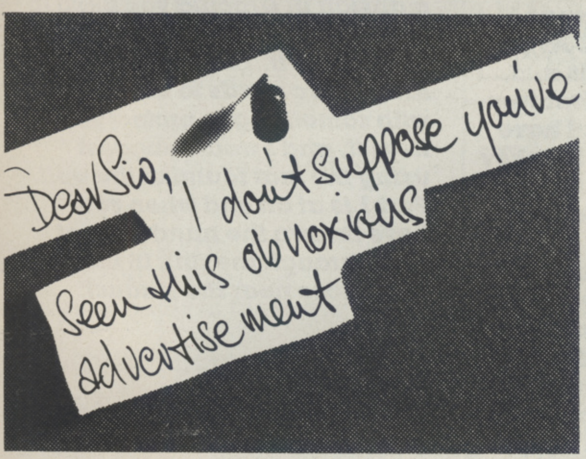

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COMMODORE 64, SPECTRUM

information, rather than picking up and finding ways to use objects. The graphics are said to be "even more stunning than Jinxter or Guild of Thieves". We waiteth in anticipation.

GOLDEN CHALICE AWARDS 1988

It is with much pride that I report on the 1988 Golden Chalice awards, which were scooped up by Level Nine. The annual event, run by the Adventurers Club, resulted in Knight Orc getting third place (bronze), Rigel's Revenge coming second (silver) and Gnome Ranger winning (gold). Unlike last year, I absolutely agree with your results Henry, what do you think about that!

INFOGRAMMES LOSES BOSS

The "infamous" David Crossweller is quitting French adventure specialists Infogrammes for an as yet unknown position still in the software industry. I understand that his place has been taken already by French national Henri Coron. The good news is that the company will be investing nearly £1 million into software development, and that can only lead to even more interesting and innovative releases from the team.

NEW LEVEL NINE GAMES

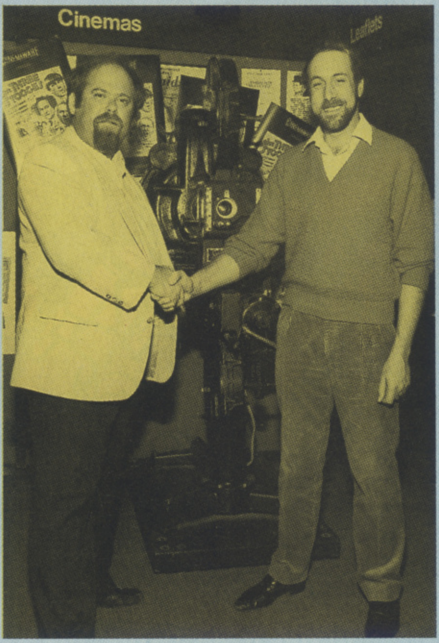
Following their so far successful alliance with Mandarin, Level Nine are to release two new adventures through them, entitled Gnome Ranger II (that title must have taken some time to think up!) and Lancelot, an adventure based on Arthurian legends.

CRL TO BUNDLE 3 ADVENTURES

During this year CRL are to release a compilation of the complete works of Rod Pike which entails Dracula, Wolfman and Frankenstein. A good buy if ever there was one.

DELTA 4 IN INFOCOM SEND UP

Ol Fergus is up to his usual tricks again with his new Delta 4 release The Smurking Horror (no prizes for guessing which game is being sent up) and is a spoof about horror movies. Can't wait.



Bob Jacobs invites Andy Moss to play the Fourth Stooge.

MAILBAG

Dear Andy,
I would be extremely grateful if you would be so kind as to give Adventure Probe a mention in your column if possible. As there is no profit to speak of, we cannot afford to advertise so any help is appreciated. As you know, Adventure Probe is a fanzine dedicated to adventure and comes out monthly. I have taken over from Sandra Sharkey as editor and will be including as many Commodore features as I can.

Thank you also for your favourable review of the adventures from Atlas Software (part of our set-up) and for pointing out those two bugs which have now been corrected. They were purely typing errors on my part and I apologise for my stupid mistake. Very best wishes.
Mandy Rodrigues, Adventure Probe, 24 Maes Y Cwm, Llandudno, Gwynedd LL30 1JE

Please wish Sandra my best. We have mentioned Probe before in the column but any help I can give to a great little fanzine I will. So consider it done, and keep writing those adventures.

Hello Andy,
This is my first letter to the Adventure section which I like very much because it is so informative. Here are some questions and answers that may help the readers who wrote in. John from W Germany asked how to get in the fourth level of the castle. Answer Never! There is no fourth level. In the third level of the catacombs under the Temple of the Mad God Tarjan there is a witch king. If you kill him you will get an eye. In the third level of the castle there is after killing 396!! berserkers a statue of the mad god. If you are carrying the eye, the statue will come to life and you have to fight Tarjan himself. If you kill him you will get to Kylearans amber tower.

Now my questions. In Dracula, how do I open the door in the mansion? In Knight Orc, how do I get past the hedge and into part two? Please help.
Oliver Naujoks, West Germany

Thank you Oliver for your kind assistance to John's plea for help, and I hope my serialisation of Bard's Tale will help you as well. To enter the mansion in Dracula you need to cut or fell the tree with the axe then climb it. The hedge in Knight Orc needs to be covered with something to protect you from it, and I would suggest using the mat found at the well. Part 1 is at an end when you have thrown the hundred foot rope through the ring in the Orc's nose near the viaduct.

Dear Andy,
You have never mentioned this game in your section but I hope you know something about it and can help me. I am talking about ASYLUM. I have been playing it for months now and so far I have got the gold, silver and credit cards, camera, uniform, matches and candle and copper wire. How do I get the magnet and battery which I need to go with the copper wire? How do I get the axe without being walled in and are the uniform and camera of any use? I hope you can help me otherwise I will end up in a REAL asylum.
Miss L Fine, Harrow Weald

Oh dear Miss Fine, you are in trouble, as Asylum really got me MADDD!! So much so that I did not persevere with it. But I am sure there is a reader who can help you. Please send any hints to me on Asylum and help a lady in distress.

Dear Andy,
I was just wondering if you could draw a map out for me for Zorks 1 and 2. Keep up the good standard at CCI. I think it is the top Commodore mag.
Obie Nsereko, Africa

My first reader from Africa, I am honoured. If you can get hold of December and January's CCIs, I presented both maps and a solution to each.

QUICK TIPS

RIGEL'S REVENGE
Don't get caught in the net, there is no escape.

FRANKENSTEIN
Cut the stoned wolf's throat.

MASTERS OF THE UNIVERSE
Attack Mantanna with the sword, then examine the stalactite for a timelink.

GUILD OF THIEVES
A pipe and a stop cock help with drowning.

CAUSES OF CHAOS
Rope climbing from the telescope leads to the key.

LEATHER GODDESSES OF PHOBOS
Wrap the baby robot in a blanket, put it in a basket, leave basket outside the orphanage. Enter after the matron has taken the baby.

KNIGHT ORC
Cool fire magically and examine grate for extra vision.

My thanks to an anonymous reader for those clues. Next time remember to write your name on your letter!

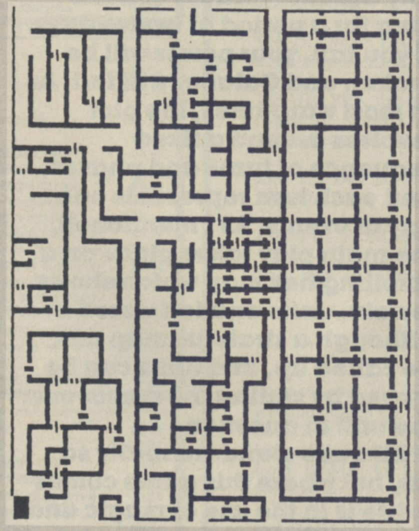
BARD'S TALE SOLUTION . . . PART THREE

Sewer . . . Level 3

We have made more progress since my last despatch from level 2 and have reached level 3 where we find some more inscriptions: "the hand of time writes and cannot erase" and "seek the snare from behind the scenes".

There is an evil place here at mid point along the eastern wall that we must avoid like the plague. Men pass and vanish condemned to haunt an endless void. Ghaklah, our magician, meditated and destroyed the foul place, proving once again what a useful member to our party he is. We came upon a long set of stairs continuing on to further upward passages, but battle and trickery have rendered us too weary to go on. We will return to the light and Skara Brae.

Skara Brae



Sewer, Level Three

We emerge at last into fresh air, which is most welcome, and into night which is not. The priests in the temple charged unusually high fees for attending to our wounds. Still, I am grateful their door was open on such a night, unlike the Review Board or Garth's equipment shop which were not, no matter how hard we beat on the doors. The next day we did indeed visit Garth and the Board, also we were pleased to find that Roscoe's Energy Emporium was still to be found at the corner of Grey Knife and Serpent Streets.

We discovered that the long stairs we found are the secret entrance to Mangar's courtyard and to have continued at that point would have meant our doom. This information came from a captured minion of the wizards. We travelled south along the back gate of the city, and found an eerie stillness had enveloped us. All the houses were silent, so we hastily returned to our lodgings and prepared for our next task, to challenge the Mad God in his lair . . . TO BE CONTINUED.

ADVENTURE REVIEWS

QUESTRON II
SSI/US GOLD £14.95

In Questron I your task was to save the land of Questron from the crazed magician Mantor and his evil Book of Magic. In fact, the Book itself still exists, as it cannot be destroyed by normal means. Its very presence poses the threat of corruption and doom to all civilisation, so in answer to the cause of justice, your quest this time round takes you back in time to BEFORE the Book was created. Your task is to locate and destroy the six mad sorcerers before they get round to brewing up their recipe for the Book. I enjoyed Questron I immensely, it was simple to get into, quick in its gameplay, and easy to use. All the actions you need are listed on the left of the screen and are selected by joystick or keyboard (which the program automatically detects).

The layout of Questron II is similar but with one or two vast improvements. The graphics are much better, with cathedrals and towns highlighted on the enormous main map screen which also contains mountains, plains, seas and swamps, depicted in an overhead scrolling fashion. Once inside a town or cathedral you get the by now familiar "Ultima" type maze graphics with little characters moving about the screen with whom you can converse and learn useful snippets of info. Each town is different in layout and contains many different shops and

continued on next page

services. The prices and goods vary from town to town, so careful shopping is needed to get full value for your hard-earned gold. Casinos are a good way to make quick money, but be wary, you could lose a packet too. The next improvement is in the dungeons. Questron II has, as well as full 3D corridors and animated creatures, an overhead map view for easy mapping. There are many fabulous treasures to be found in these dark mazes, but they also contain some very dangerous monsters.

Carrion Creeper

Your first task is to locate the "hall of visions". It is from here that Mesron (the great wizard who transported you to Landor) can communicate and guide you in the right direction. You start off as a lowly Plebe and only by cunning fighting and money will you build up your character with enough power to take on the six sorcerers. There is very little magic in the game, in fact just four spells: Magic Missile, Fireball, Sonic Whine and Time Sap. These can all be bought at selected towns which carry a Mystic shop.

In all, Questron II has two continents set on a huge circumnavigable map, a variety of transport ranging from foot travel through to llama, ship and eagle, over 60 different monster types and enough dungeons to satisfy even the most hardy adventurer. Yes, folks, this game is an absolute must for anyone with even a hint of role-playing in their blood. I have been hard at it now for over two weeks and have just located the Hall of Visions and gone up a notch in class. Miss this not!

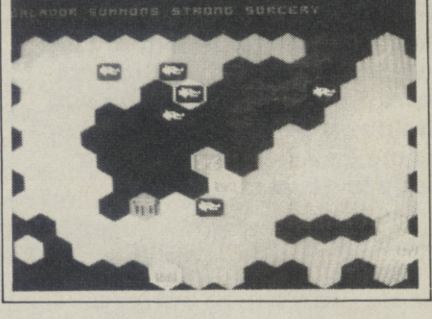
PERSONAL RATING 10

SORCERER LORD
PSS £9.99

Sorcerer Lord is PSS's next try at fantasy war gaming after seemingly ditching plans for taking their MIDAS role-playing system any further than the first release. Sorcerer Lord is a much more conventional approach using the familiar hex moving system so favoured by SSI and the like. It is a very Tolkeinian plot centred around the need for possession of the Rune Rings, and has for a cast of characters Shadow legions, Wolf Riders, Elven Lords and Man. All very Middle Earth. You play the part of the Man Sorcerer Lord who, with the help of the Elves (the Galanor alliance) must mobilise and gather your forces, resist the initial onslaught of the Shadow legions, and prevent the Shadowlord from holding any Galanor fortress or Rune Ring for a period of twelve days. If you fail, your power will be broken and Galanor will fall. As in most wargames, the plot revolves around a fixed sequence of turns and phases, and each turn represents one day of events. As I mentioned, the main play takes place on a scrolling hex map which shows terrain, units and fortresses although a strategic map can be called up, and units can be moved by sliding the cursor over the unit in question.

All quite standard really so far, but where this game comes to life is in the use of magic and combat. There are really a lot of factors taken into account during combat, numbers of riders/warriors, fatigue, leadership values, terrain, leader nationality and sorcery. The sorcery ranges in power from weak to devastating and adds to the combat power of the troops. It is determined by the skill of the leader and the distance to the nearest Rune Ring.

The package is impressive, with a full map of the land of Galanor, a well documented manual and a handy reference card.



It all goes into the mix to provide you with an entertaining war game for those of you who prefer mental generalship to the cut and thrust of role playing.

PERSONAL RATING 7

BLOOD VALLEY
GREMLIN £9.99

This is the first time Gremlin have attempted a Dand D type game, and frankly they should have left it on the drawing board. For me, a lover of the text adventure variety, to enjoy an animated role playing game I need to almost believe I am in there with my character, fighting those monsters face to face. The screen area on Blood Valley is so small that you need a magnifying glass to see what is going on. The story is based on the "Duelmaster" series of books and concerns your efforts to escape from your master Archveult, who has decreed that you must be hunted down in the valley and killed. Your only chance of survival is to escape. Given the scope and size of the action, if it was me, I would plump for being caught and put out of my misery. Miss this one.

PERSONAL RATING 2

THAT'S IT FOR THIS MONTH. LET'S HAVE SOME CONTROVERSIAL LETTERS FROM YOU, NOT JUST PLEAS FOR HELP (ALTHOUGH I WILL ALWAYS HELP WHERE I CAN) AND KEEP SENDING IN THOSE HOME-GROWN ADVENTURES. SEE YOU NEXT MONTH.

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Are monitors good for reading speeds?

Anthony Mael discovers an experiment that shows the size and shape of the Monitor makes a difference to your reading efficiency.

Do you think you read text as fast from a monitor as paper? And does the shape of your monitor – wider than it is long – affect your reading speed and understanding. An interesting experiment in Canada seems to indicate that the way we read differs on different media.

In a research project at the University of Toronto, a comparison was measured in the difference in reading speed between computer monitors and paper. The computer monitor they used measured 14 inches corner to corner, and displayed green characters on a black background.

The results were surprising. There was a 24.1% loss of reading speed when working on a monitor.

The room in which the monitor test was run was different from that in which the paper tests were carried out. The room with the monitor was suited to the monitor, with less light, optimum screen contrast, and no reflections. The room used for the paper test was equipped for reading from paper, and therefore better lit.

It is probable that were both tests run in the same room; the reading speed on paper would fall, because there would be less light. The total loss of working speed, monitor plus paper together, would probably be markedly higher, which is what happens in a real-world office environment. It is possible therefore that there could be an efficiency loss in excess of 30%.

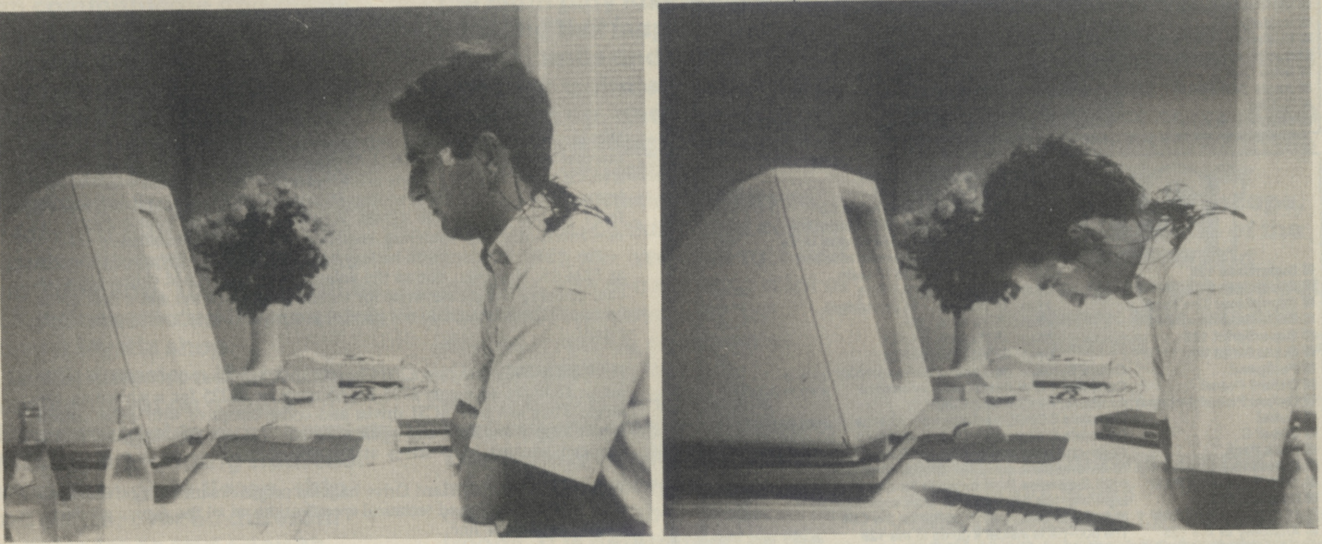
The experiment was carried out to test the efficiency of a page size – long instead of broad – monitor screen. In this case the one used was manufactured by ETAP.

ETAP monitors are page-sized, with a high refresh rate for extremely stable image, high luminance output and black characters on a light background. A new experiment was set up to measure the difference in reading speed between monitors and paper.

The results were equally surprising. Working with ETAP monitors did not cause any loss of efficiency at all. It seems they can be read just as quickly as paper.

The experiment was carried out under rigorously scientific conditions. A normal working environment was simulated in a room, with appropriate lighting and background noise, normal office furniture, and normal climate. The ETAP screen was set up in this environment.

A test subject was instructed to read texts on the screen, to answer a



Research tests of monitor and paper reading (note the bottles disappear when reading from paper).

questionnaire on the text in order to measure his understanding of it, and to take a letter and numeral recognition test. The entire procedure was then repeated, with similar texts and tests, but working on paper. The full cycle was run through twice, for a total duration of 3½ hours.

During the experiment, the subject's attitude was analysed, and his reading speed per test and per test was recoreded. In addition, his EEG (Electroencophalgraph brainwave measurement) was taken throughout the experiment, in order to measure his vertical and horizontal eye movements. The EEG was also used as an objective measure of mental tension.

Results of the Measurements

Paper reading index: 150.5
Monitor reading index: 154.8
Paper reading speed: 215 words per minute
Monitor reading index: 180 words per minute
Paper reading comprehension: 70.1%
Monitor reading comprehension: 86.2%
Paper vertical eye movements: 6.7 per 100 words
Monitor vertical eye movements: 5.9 per 100 words
Paper horizontal eye movements: 17.0 per 100 words
Monitor horizontal eye movements: 18.0 per 100 words

Evaluation

Reading from paper is 16.3% faster than reading from a monitor, but comprehension of the text is 16.1% higher when reading from a monitor. The combination of speed and comprehension is expressed as the reading index, which is (comprehension × speed)/100, which is in general use as a standard (it prevents subjects from reading the text very fast without understanding it). If this calculation is applied to the results obtained, there is a reading index 150.5 for paper, and 154.8 for the monitor. This difference is negligible, since it lies within the statistical margin of error.

The number of vertical and horizontal eye movements can be deduced from the EEG. Once again, the differences between reading from paper and from the monitor are negligible.

The EEG result shows that the mental tension required to read from paper is greater than that required to read from a monitor.

This difference in mental tension, which eventually leads to greater fatique can be attributed to a combination of factors: the most important of these are probably reading posture and the smaller size of the monitor, giving a better overall picture of the text. This is also a possible explanation for the reduction in vertical eye movements when reading from the screen.

In order to find a better definition of the true causes, a research programme was set up at the State University of Groningen under Professor Mulder.

In general, it seems that reading from an ETAP (or possibly similar page shape and size) monitor is as fast and accurate as reading from paper, where with other monitors, there seems to be a 30% loss of efficiency.

The reading research was carried out under the direction of Dr. K. Van Wontergerm, a Doctor of Ergonomy and Human Ecology, Chairman of BES (Belgian Economics Sociey) and of CERGO (Centre for Ergonomic Research), and Head of the Ergonomics Department of IREA (Institute of Salvage, Ergonomics and Occupational Hygiene).

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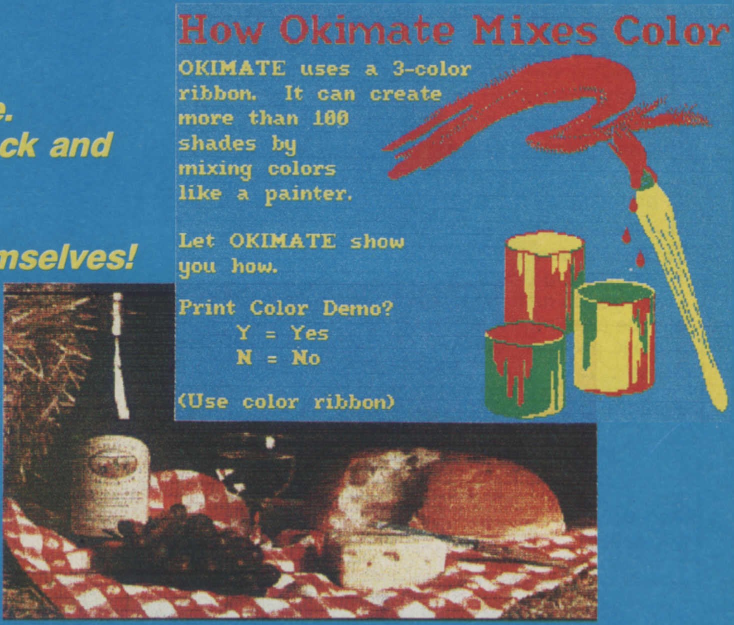

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AMIGA ON COMPUNET

Justin Jackson goes on line to the U.K.'s modem accessed networking system.

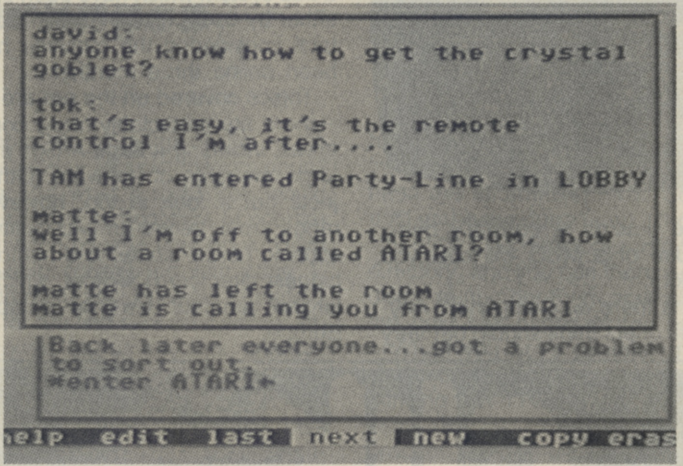
Compunet is a networking system – using a modem, subscribers around the country phone a local access point which then allows their computer to communicate with the Compunet mainframe in Middlesex England. Both text and programs can be downloaded from the system and users can also put their own software or text on Compunet for others to use. In addition, each subscriber can leave private mail for people or play games such as Federation II or MUD.

Until recently only owners of the Commodore modem could log on to Compunet, keeping it the preserve of 64 and 128 users. Since December, however, Amiga owners have been able to get online using special terminal software and a suitable modem. Software for the IBM PC and compatibles should be available in the near future too.

The Amiga software can be ordered from Compunet, downloaded off a bulletin board or copied from a friend. Getting a disk from Compunet costs £24.95, whereas the latter two methods entail a £19.95 registration fee. Piracy is not possible as the Compunet mainframe checks when you log on to see if you have paid – and if not cuts you off! You will also need a suitable Hayes modem; Compunet are selling them at cost.

The software (written by Ariadne, authors of the Kickstart Guide) certainly makes full use of the Amiga. When you are online, the screen is divided into two windows. One displays the current directory which shows you where you are on Compunet and lists up to eleven items which you can download. Some of these items – known as 'up-loads' – may have a further directory beneath them which you can access.

The whole of Compunet stems from just one directory – selecting a topic leads you onto another directory with sub-topics and so on until you finally reach the upload you are after. Each upload on the net is numbered, so users may go to it directly if its got is known. The more important uploads can have this number changed to something easier to remember – for example, goto AMIGA for the Amiga area.



```
david:
anyone know how to get the crystal
goblet?

tok:
that's easy, it's the remote
control I'm after....

TAM has entered Party-Line in LOBBY

matte:
well I'm off to another room, how
about a room called ATARI?

matte has left the room
matte is calling you from ATARI

Back later everyone...got a problem
to sort out.
*enter ATARI*
```

Uploads may be either text frames, files (e.g. programs) or IFF pictures. The latter two are simply downloaded from Compunet and saved to disk, although the Compunet software will try and display IFF graphics if possible. Text frames are not saved to disk, but displayed in the other windown on the screen. They are also copied into your editor, which can be opened and used at any time. Because Compunet was originally designed for the 64, it uses the 64 character set – all the other machines emulate this fully and so there are no restrictions there.

> ***"Topics covered on the net are diverse – there are predicatably many computing areas, including a large Amiga area and large amounts of software."***

As well as downloading, subscribers may directly upload onto most of the system. Uploading is easy; they software handles everything so no expert knowledge is needed. It is also an integral part of Compunet – over 2,5000 uploads were made over the Easter weekend alone. Uploading is carried out using the same software and on the same phone call as doing anything else on the net. No authorisation is necessary either. If privacy is required, then the user may use the mail facility which enables him to send text (NOT files at present) to specific users.

Some of the net is not presented in a rigid frame format, but in a scrolli9ng system. Partyline works like this. You can link to Partyline and 'talk' to other users who are on at that time. As well as just being able to chat, there are a number of commands at your disposal.

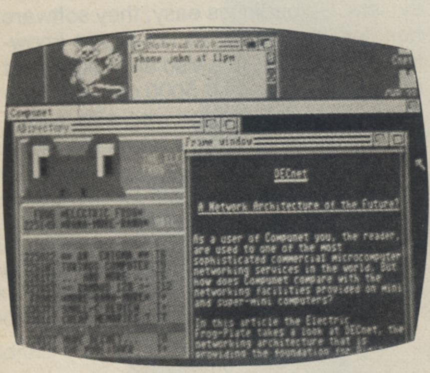
Text is usually preceeded by the user's ID, but this can be changed with an alias command. This does not affect your ID in any way. In addition, users may create rooms which they can enter and so talk privately. Some new features which should be available shortly include the ability to create a locked room so you can choose who you admit and an ignore command in case somebody is being stupid! Finally, users can leave messages on a noticeboard which can be read by all. Using Partyline will cost you £1 an hour.

The scrolling format is also used for MUGS – adventure games where instead of just playing against the compu-

continued on next page

AMIGA ON COMPUNET

ter you also compete with other netters who may be using the MUG at that time! Needless to say, they are highly addictive. Compunet currently has Federation II on offer, which is set in space. MUG will



As a user of Compunet you, the reader, are used to one of the most sophisticated commercial microcomputer networking services in the world. But how does Compunet compare with the networking facilities provided on mini and super-mini computers?

In this article the Electric Frog-Plate takes a look at DECnet, the networking architecture that is providing the foundation for

return some time (it is currently being recoded). Use of a MUG will cost you £1.75 an hour.

So, what is there on Compunet? Anything that the users think should be! Very little comes from Compunet who concentrates on indexing, laying the framework for new areas and general housekeeping on the database, although they will support users if the venture is worthwhile. Of course, if the staff come across a piece of software which catches their eye then within a few days it will be on the net . . . There are now over 150 Amiga programs on the system which have been uploaded either by users on Compunet. Not a bad system which have been uploaded either by users or Compunet. Not a bad total considering the machine has only been online three months!

Topics covered on the net are diverse – there are predictably many computing areas, including a large Amiga area and large amounts of software. Other subjects get a look in too, however, and range from centre-ground politics and sport to horror stories and humour. The biggest directory is Metnet, which is the largest amateur weather database in Europe.

One aspect of the network which should not be missed is the Compunet demo. These started a few years back and have evolved from simple hi-res pictures to animated displays with music hacked from games. Most demos are coded for the 64, although the first few Amiga demos written by netters are beginning to arrive. Some people are offered contracts by companies who have seen their work on Compunet.

Most users will only have to pay local phone rates to use Compunet – there are now around 70 nodes throughout the U.K. and in Dublin. Access can also be via PSS. On top of this, Compunet make a small additional charge to cover networking, although great savings can be made by paying just under £10 a quarter for free access – then you only have to watch you 'phone bill! There usual type of subscription comes in at £15 a quarter.

Compunet's strong point is definitely the way the user is involved – practically all areas on the net are run by subscribers, albeit with a little support from Compunet in the way of free gotos and banners. Anybody can start up their own spot, although they may need to splash out £10 for unlimited uploading once their free pages have run out. Anyone thinking of starting a bulletin board should think strongly about setting up on Compunet instead . . .

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'Literary Lateral Thinking'

(or 'How to Make Programs Do What They Were Never Intended To Do . . .')

Peter McDonald examines a problem of large scale indexing which most word processing packages fail to solve.

The problem can be stated simply: 'By how can a home-computer owner, using a normal word-processing program which does not already include that facility, produce an index for a book? – or any large scale collection of documentation?'

Ideally, of course it could be done entirely within a word-processing program. But I have not so far hit on a method which avoids writing on scraps of paper, or using a second computer, which seems a pity.

My thinking on this problem was crystallised when I reviewed Cornucopia Software's 'SUPERCAT' for the Commodore 64. (See June 1988 CCI). The title is short for SUPER CATALOGUE and it is a professional disk-directory-maker.' If you feed in your disks, the program notes their numbers (or numbers of them if you have failed to do so) and produces a catalgoue in which you can find the directory of any disk by entering its number. The CATSORT facility cross-indexes the information from the master directory on to another disk. By typing the name of a program/document you can learn on which disk(s) it appears. (There is provision, too, for a wild-card search).

I realised, of course, that if I asked for 'A*' on CATSORT, it would list every program/document beginning with A. It would list them in alphabetical order, and show the disk number alongside each entry. Furthermore, there was a facility for doing a print-out of the *whole* of the CATSORT directory: that is to say, every program or document in your whole collection of disks, arranged in alphabetical order, with disk numbers alongside each. That was a perfect index, but applied to the names of items in your disk directories, not to subjects in the book you had just completed on disk.

Is it possible to adapt it so as to produce an index for your *magum opus?* Yes: it is. But what a task! You would have to use (only temporarily, of course) a disk for *each page* in your book. How! Disk 1 would correspond with page 1. You would open your print-out at page 1 and look for the first item on it which you want to index. Let us say it is 'charity'. You title a document 'charity' . . . it need have nothing in it . . . and save it to disk so that 'charity' appears on the disk directory. Then you create another document on that disk using as its title the next word on p.1 which you want to appear in your index. You proceed in this way, creating a document for every word on p.1 you want to index.

Then you grab another disk, number it 2 and proceed in the same way, remembering, of course, that if a word you have already noted on p.1 also appears on p.2 you must create a document with that name on disk 2 as well.

You can see the drill. You are building up a collection of dummy documents which have the same names as the words you want to appear in the index. And eventually, with the aid of SUPERCAT, you will be able to turn them into a directory, arranged alphabetically, with page numbers alongside. But what if your book is 300 pages long? Do you need 300 disks? Not at all. Once you have entered the directory from a disk into the master directory, you no longer need the information on it. So you wait until you have done (say) 10 disks; then you enter their directories into the master directory, and you can then re-format the disks, re-number them and use them for the next few pages of the book.

> ***'When you have completed the exercise you will have fooled the program into thinking that it has been listing names of items on disks.'***

When you have completed the exercise you will have fooled the program into thinking that it has been listing names of items on disks. And it will, if you wish, produce a print-out for you. With an alphabetical list of all the words, with page numbers alongside, you can 'flesh out' the list by drafting sub-headings etc.

O.K. We don't all have C64s, and even if we did, a program marketed by a firm in Portland, Oregon might be of little more than academic interest. Yes it IS of academic interest because it helps us to analyse the problem The CATSORT facility produces an alphabetical index of disk directors. Where, on our own word-processing programs, do we have a similar 'sort' facility?

On VIZAWRITE CLASSIC, which I use with a C128D, there are three 'sorts'. First, there is an automatic sort for each disk directory. Ask the program to list the directory of the disk in the drive and it will list the items alphabetically. So, without pursuing the point too far at the minute, we could use the routine suggested above (i.e. a disk for each page of the masterpiece, and a 'document' created for each word to be included in the index). That will not in itself give you a full alphabetical directory of all the disks together. But at least each disk will have its items arranged alphabetically.

The second 'sort' facility is in the spelling-checker. When you have used it to scan your document, it lists every word in that document and does so alphabetically. But it does not tell you on what page the word appears. And, of course, it lists hundreds of words you would not want in an index (e.g. and, or, the, for, in, use, each, same, etc).

Finally, there is another 'sort' within the spelling-checker. The program enables you to add words to the dictionary. As it indicates an unidentified word during the 'verify-scan' routine, it offers you some options, one of which is to instruct the program to 'learn' the 'new word'. When you have completed the check, you can choose an option called 'add'. If you do, the program will save all the words you have instructed it to learn. It puts them into a section called 'user dictionary' on your spell-checker disk; later you can merge these words into the main dictionary. But until you merge them, they remain in the user dictionary and are arranged alphabetically. And because the user (but not the main) dictionary is in fact a 'document', it can be altered on screen, printed-out, saved in an amended form etc.

The question then, is how can we use one or more of these sorts in order to produce an index?

Now not everyone has VIZAWRITE Classic. Yet many word-processors possess similar features. Perhaps with slight variations the remarks I have made so far apply to yours, too. I hope so, because, with a bit of luck, this article, if it arouses any interest, might spur someone into producing a blindingly simple solution and presenting it to CCI for our mutual benefit.

> ***'If, of course, you want to list variations of the same word together (e.g. tax, taxes, taxation, taxable) you can (if your word-processor is like VIZAWRITE CLASSIC) ... simply type 'tax' and all the words having those three letters in that sequence will be found for you on the search.'.***

My first approach was to create an empty dictionary. This is a facility on the spell-checker. Because the dictionary contains no words at the outset, it does not recognise any of the words in your document when you carry out the first 'check', for it has nothing with which to compare them. You then have to build up your own dictionary by making the checker 'learn' all the worlds you have used. This would be laborious and (as I have said earlier) there will be hundreds of words you do not wish to index. So just running the checker through your book, with an empty dictionary installed, is not practical, even if your computer has enough memory to hold the book, the dictionary and the word-processing program all the same time.

Let us then break down the task. What we want is a system which will arrange all the (index) words alphabetically and enable you then to add the sub-headings and the page numbers, e.g.:

CHARITY:
  definition, 101
  law relating to, 1
  registration of, 83
  tax advantages of, 31

In practice that means preparing the complete list of words first; then finding the reference to each word in the text, and noting the page and drafting a suitable sub-heading.

Right. How about this?

You have written your book and have taken a hard-copy. All that remains to be done is the indexing. Create an empty dictionary on your spell-checker. With the hard-copy before you, create a document called 'Index' on your word-processor. Look at page 1 of your book, and every time you see on that page a word which should be included in the index, type it on p.1 of the 'Index' document. The order does not matter, or the lay-out, providing that you avoid running two words together. When you have listed all the 'indexable' words from p.1, turn to page 2 of your book, and insert a page-ending on the screen so that you now have p.2 of 'Index' on screen. Type into that page every indexable word from p.2 of the book.

If, when you are typing a key-word from a subsequent page, you remember that you have already listed that word, do not bother to list it again. As long as it appears *once* on your list, all is well.

If your book has 254 pages, you should end with a document called 'Index' which has 254 pages in it, too. Save it to disk (indeed, keep doing so, as you progress).

Now bring out the spelling-checker and create a dictionary by running the 'Index' document through the empty dictionary, and making it 'learn' all the words. That should not take too long because you have only typed into the 'Index' document the words that really matter. This will create for you a 'user dictionary' containing ONLY the index words. They will all be listed alphabetically in the 'user dictionary', and as that is a word-processor document, you can print a copy of it.

Now you start your cross-check. I can see no alternative to pencil and paper (or a second computer) at this stage. What you do is to load the book document into the computer (if it is long, it may have been done part by part, but that does not matter). Starting at p.1 of the book, you look at the first word on your printed index-list. Now do a 'search' for that word through the whole book. Each time it stops at the word, note the page, and draft your sub-heading on a piece of paper which has the word written at the top. Continue until you have noted every occurrence of that word in the book.

Then you 'GOTO p.1' again, and search for the second word on your alphabetical list, following the same routine with that. If, of course you want to list variations of the same word together (e.g. tax, taxes, taxation, taxable) you can (if your word-processor is like VIZAWRITE CLASSIC) ... simply type 'tax' and all the words having those three letters in that sequence will be found for you on the search. I suppose some systems might require you to type something like 'tax*' to get the same result.

It is hardly a perfect system. But it is, I think, much easier than plodding through the book page by page and trying to compile the index as you go along, with all the shuffling of papers, or turning of note-book pages, this entails.

Want to be really smart? At the point where you have compiled your user dictionary, turn it into a new document, with a separate page for each word. That is easily done. You simply put a page-ending symbol after each word. Now print-out the document and you will find yourself with a ready-made note-pad, with a page for each word in your index, and the word already typed at the head of each page!

Now: any bright ideas for speeding things up? Can you think of a way of dispensing with notes on paper altogether? Is it possible to produce a system, using the facilities available in the ordinary word-processing program, which will ensure that when you type into the program the last reference from the last page, your computer is instantly ready to shoot the text into a printer and provide you with a print-out of your Index? I suspect that by switching-in a program like SUPERBASE at the right point, you could make life easier.

Has this any practical value for anyone who is not a writer? It might be a useful addition to the armoury of those who want to make a little extra income by typing authors' manuscripts into a word-processor. Writers hate having to spend time on 'non-creative' work (like typing 'fair copies', or compiling indexes). If you are able to prepare a competent index for them, you have an advantage over those who have not learnt this trick.

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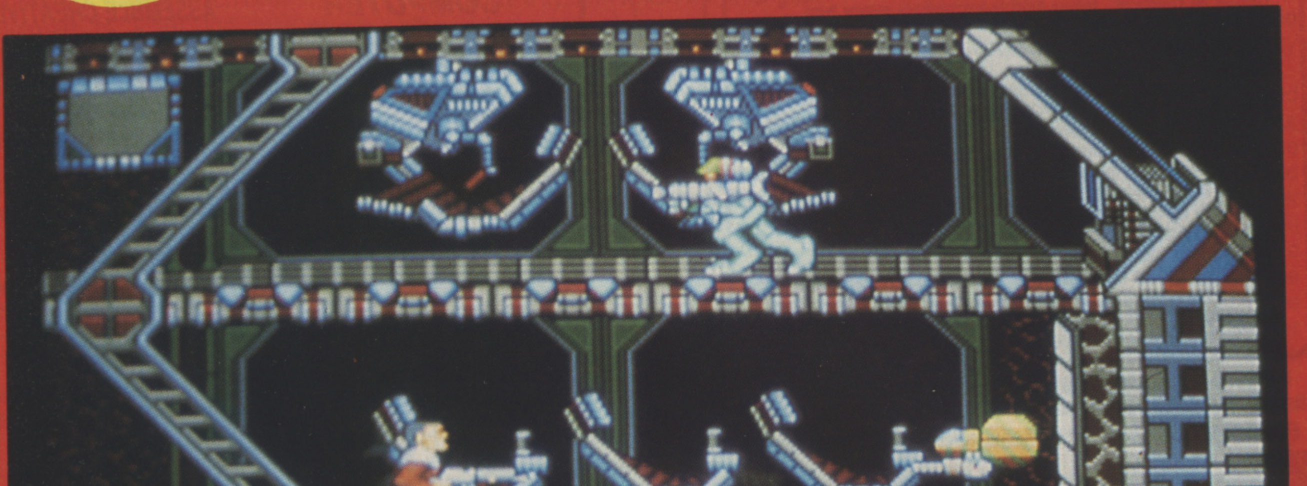


Genetically enhanced super-humans were the Earth's emergency defence force, a kind of future SAS. Known as the Obliterators, they had been designed to be alert, brave, swift and above all, very strong. Alas, all but one have now been destroyed during action. When Earth came under attack from the most powerful ship ever built, there was no choice but to send in that last Obliterator.

Four vital components spread throughout the ship are vital to its operation. Removal of these would leave it defenceless against Earth's forces. You, as Drak, the last Obliterator must find and remove these components before making your escape.

To be honest, Obliterator is really Barbarian in space. As Barbarian was and still is one of the best games around for the Amiga, this has to be a good point in anybody's judgement. Over one hundred screens make up the play area which uses a flick-screen side-on view. A strip of icons along the bottom of the screen is used to control Drak. These allow our hero to run, pick up, defend, enter, shoot and jump. I was a little disappointed to see that Psygnosis have not improved their sprite handling routines, which are still a little slow and even jerky at times. However, this has been disguised and compensated by the incredibly dynamic-looking animation frames of Drak in action.

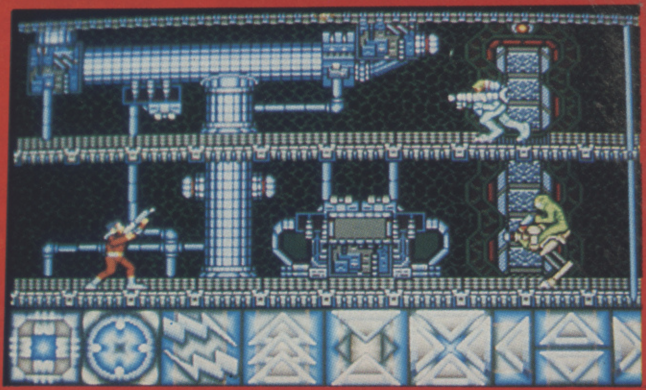
Each room and corridor in the ship is guarded by members of an army of semi-robotic creatures. Some sit astride android ostritches, others fire at you from hovering bucket seats, and others just blast you with shoulder-mounted bazookas. Luckily, you are not defenceless. Using the defend icon when standing sill causes Drak to press himself up against the wall, whilst defending when running initiates and spectacular roll. Four weapons are available to Drak. He starts out with a pistol, but the more powerful weapons, the rifle, blaster and bazooka have to be found. Ammo is limited and separate cartridges for each gun can also be found dotted about the ship.

"Six degrees of elevation are possible, giving a tremendous sensation of power."

As you can see, the graphics are superb throughout the game, only lacking slightly in variety. Some of the best frames can be seen when aiming a weapon. Six degrees of elevation are possible, giving a tremendous sensation of power. Some aliens cannot be destroyed with a pistol and require the power of the bigger guns. You would expect the ammunition for these to be less abundant, but their capacity is also substantially more limited.

RATOR

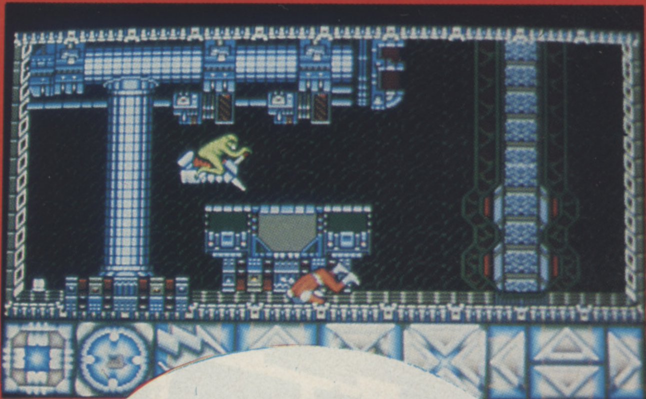
Psygnosis



For example, the pistol can hold up to fifty shots, where as the bazooka can only hold three.

Typical of Psygnosis, Obliterator is excellently presented. A large glossy package houses the disk, which when booted treats the player to a beautifully shaded animation of Drak showing off his fire power. A pixel perfect copy of the cover artwork follows before the game starts. A poster of the artwork is also included.

> *"Obliterator's spectacular graphics are immediately appealing, and some of the surprises later in the game prolong the attraction."*



Obliterator's one annoying point is that at times, Drak ignores your commands and goes off on his own rambles, sometimes ending in a fatal collision with a baddie. When compared to Barbarian, it did not give me such a strong urge to progress, maybe because in Barbarian, you knew that the next screen or two would bring on yet another new and imaginative monster. One improvement it has over Barbarian is the facility to save the game at one of several set positions.

There are a few reasonable sound effects during the game, but the atmospheric music compensates for this unusual mediocrity. Obliterator's spectacular graphics are immediately appealing, and some of the surprises later in the game prolong the attraction. My advice to Psygnosis is that they spend a good deal of time developing their sprite routines. Once they have mastered that, they will be capable of producing true arcade quality games, which must be their ultimate goal.

Nevertheless, their present release, Obliterator, keeps up Psygnosis' exceptionally high standards and I strongly recommend it as a great game to have in your collection.

T.H.

Graphics: 9
Sound: 8
Playability: 8
Value: 9
Price: £24.95

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Are you using the right disks?

Are cheap disks an expensive solution? This article is by Peter Miles and written for a recent ICPUG newsletter and is reproduced courtesy of ICPUG offers an informal opinion.

There has always been much talk about whether or not pricey 3.5 disks are a better bet than those bought during the last 2 hours of a computer show. The primary difference between cheap and expensive disks is one of manufacturing quality, and that of course costs money. Many people forget that the cost of the disk is many times less than the value of the material that is recorded on the disk. The main cause of all those read/write errors and occasional 'not a dos disk' is the relative levels of the signal to noise ratio. This is made up of the surface noise of the heads passing over the iron oxide particles of the disk and the data signal level. For the most part this will not matter as long as you are reading and writing your own disks, therefore any errors are consistent and relatively transparent to the disk drive. When you start passing disks to other users then there are likely to be more errors. It is all to do with the 'clipping level' and 'certification'. 'Clipping Level', expressed as a percentage is the ratio between the data signal level and the noise level.

On cheap disks this can be as low as 40%, whilst on the more expensive disks the level fan be as high as 70-75%. This is important because the greater the clipping level the more inaccurate the head alignment to the track can be and still read data. This happens most often, as we in the ICPUG library have found, when third parties try to read disks on different machines. Head alignment only has to be off very slightly and you get a read/write error.

The second part of the problem is certification. This is generally measured by the American Standards Institute (ANSI) who state that only the data tracks must be certified. The test also says that the tracks must be free from flaws that may give rise to errors. This test does not check for errors between tracks, but some of the more reliable companies are now checking for gap flaws. This is to ensure that these flaws do not creep onto the data tracks.

To summarise, this means that disks with a clipping level exceeding 70% and certified on and between the tracks will have a greater degree of interchange reliability between drives with the minimum chance of read/write errors. You can buy 3 or 4 cheap disks for the price of one expensive disk. What you cannot do is put a price on the loss or corruption of data and the sheer frustration of continuing problems.

I know from bitter and expensive experience.

Peter Miles ICPUG Librarian.

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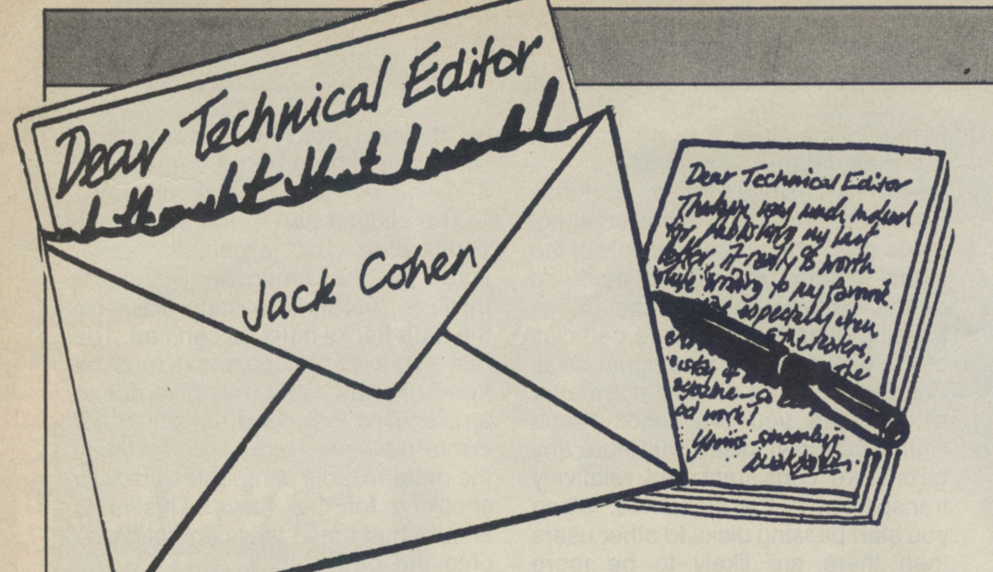


Dear Technical Editor,
I have a C64 and I would like to upgrade to either a C128 or a C128D and I have the following questions.

Drives – two are available: a single-sided (1570) and a double-sided disk drive (1571). If a commercial program say a wordprocessor, occupies two sides of a disk, how is the program supplied – on one double-sided disk (i.e. only the 1571 can read the 'flip-side') or on one side of two 5¼in disks (it can be thus read by both)?

Games – are both drives 1541 compatible? Which disk-based software/games for the 64 do not load on the 1570/71, apart from Elite?

Back-ups – I would like to transfer most of my original cassette games to disk, using one of the commercially available cartridges. However, some of the games do not run if the disk-drive is on, so it would have to be switched off after loading. Is it possible to disconnect the C128D's internal 1571 without switching off the computer? If not, the cassette game would not run on a C128D.

I am considering the 1581 3½in drive for the 128. Unfortunately, games are still supplied on a 5¼in disk. Would it be possible to transfer games using, say, Freeze Machine? This cartridge allows games to be saved to disk at first load (I don't expect this would work with the 1581), or at normal speeds (would this option work?).

How much is a subscription to ICPUG from Malta?
F. Polidano

Dear F. Polidano,
It depends on how large is the size of the program suite.

The supplier can be asked if it is possible to supply the program on the 1570. Both drives are 1541 compatible and only games which have been made specific to the 1541's roms will have trouble in loading.

To turn off the internal drive of the C128D all that needs to be done is to change the device number to '9' by using software memory writes.

Not all games can be transferred using cartridge-based copiers, it depends on the way they were written.

A subscription to ICPUG from Malta is (at present) £16.00 incl. and from 1989 sub will be £17 including share (see ICPUG advert in this issue).

Dear Technical Editor,
I have been the owner of a Commodore 64 for some considerable time and have built up my system to include 1701 monitor, 1541 disk drive and Quickdisc cartridge. The software I have used is too numerous to list here, enough to say that Easy Script and Superscript was employed a great deal to do a lot of word processing.

I have now purchased an Amstrad (I know, a traitor) PC 1512 DDMM, the reason for that decision was that they are compatible with the computers used at my work, making data swapping easy, which brings me to the reason for writing to you.

I wish to transfer the Easy Script and Superscript files to my PC (as rewriting them will take forever) for use on my Wordstar 4 wordprocessor which uses ASCII files. I understand from an article in a club News Letter how the PC can receive incoming data via the serial port and what instructions to give. What I am unsure of is the instructions to give the 64. Can I just use a wordprocessor, instructing it to output to the RS232 port? Or do I have to write a program (where do I start?). Further, which pins do I connect to where? I have heard from an Amstrad owner of long standing (are they to be totally trusted?) that I require a 'Null cable'?? I do have the skill to make my own cable up, if I can find out which to where.

The receive instructions for the PC would be MODE COM1: 1200,N,8,1 which as you no doubt know means – 1200 baud, Parity none, 8 bits, Stop 1. Would the sample program at page Nos 356/357 of the Commodore 64 programmers' Reference Guide help in any way? Page 360 has the port pin description which is too technical for me.

I would be grateful if you can help me with my problem. It will save me lots of typing. I have not given up the 64 totally, both my sons use it for games and I still use it for making notices and a club News Sheet, using Print Shop, Printmaster and News Room.
F. W. Brewis

Dear F. W. Brewis,
First as to the cable required. It will be much simpler to contact Brainboxes of Liverpool (051-220 2500) about their RS232 interfaces and a suitable cable. You could also try York Electronic Research (0904 610722) of York.

Referring to the CBM 64 Programmer's reference guide that you mention. To transmit data use the program on page 357, but substitute the following for line 100.

100 OPEN 5,2,3,CHR$(8): rem baud rate 1200 instead of 300)

then GET the data from a SEQ file output by your wordprocessor (ES or SS). Then you have OPEN 2,8,2, "0:data,s,r" and instead of inputting data from the keyboard, it is input from a SEQ file using GET#2,a$ (not GET a$). It is then output to RS232 port with PRINT#5,a$.

Dear Technical Editor,
I have a PET 8296-D and a C64. Is it possible to convert software from both of these (especially the C64) computers to the Amiga 2000. If this is possible, could you tell me how much it costs, and where I could get this piece of marvellous technology?

Also, could you tell me what pokes you need to convert software from (a) C16/+4 to PET, (b) C64/C128 to PET and (c) PET to C64/C128?
Alun James

Dear Alun James,

Both a 64 emulator and a PET emulator are available for the Amiga so that you can run software designed for the older machines, but not in the Amiga style. To convert software would require a rewrite in (say) Amiga basic for basic programs and machine code conversions would also require a rewrite.

Data from databases, wordprocessors etc can be transported and converted to true ASCII from PETSCII using a suitable program. The format of the data will most probably also need converting.

Dear Technical Editor,

Recently I bought a 1541 disk drive and find most of the disks are back-ups but don't load. I get a dos error 73. Can you tell me is there a way I can find the correct disk id. A program in particular is MacMusic. I do not know a great deal about computers but the facilities I have are Expert Cart, Tool Kit Utility and Disecta IV. I do hope you can help as my trial and error in changing disk id is driving me barmy.

V. J. Rigby

Dear V. J. Rigby,

This is the result of software companies using protection schemes in their products.

It is designed to stop the public using pirated back-ups on which they get no royalties from their software.

Whilst it is also true that the utilities are designed to help you make back-ups, this is only for copies of legitimately bought software for your own use and not for resale or passing on to friends.

CCI does not support software piracy and therefore I cannot help you in this case.

Dear Technical Editor,

I have got two Commodore 1660 modems (Modem/300) from the U.S. These use the American Bell Standard and in Europe the standard for 300 baud modems is CCITT V.21.

HELP! My options are: (1) I can call to myself; (2) I can call to the U.S.; (3) Can I fix these to the European standard, or can somebody else fix/change them!??

Please help me!

Mr. Jussi Kosonen

Dear Mr. Kosonen,

The 1660 modems were only sold in the U.S. and the circuit diagrams are only available from there.

CBM tried to make them for Europe but found they were not going to be able to make them comply with the European regulations.

It will be simpler to construct your own modem than to change the 1660 to European standards.

Dear Technical Editor,

I recently bought a second-hand C128 and set about using the monitor with some books I have to learn how to program assembly language. It appears to be impossible, however, to use labels on the monitor. There is no documentation on this in the system manual, and I can find no other info about the C128 monitor . . . HELP!

Marc Bangs

Dear Marc Bangs,

The C128 built in monitor does not allow labels because it produces executable (object) code and does not therefore have source files.

The program produced by entering object code direct contains actual (i.e. absolute) address references.

Thus you do not have symbolic addresses, arguments and comments that are allowed by assembler source files.

The resulting code is ready to execute but harder to write.

There are several suitable assemblers that you can buy, e.g. Commodore Assembly Development System or similar.

Dear Technical Editor,

After reading your May issue of CCI, I have three questions regarding my C128. The first question is that I have a 1541 disk drive and some Nashua disks. The problem is on tracks 1 and 10. These tracks are corrupted so badly that I can not copy disk programs using Freeze Machine or interrogate said tracks with a disk monitor (copy of the program can be found in "Anatomy of the 1541 Disk Drive" published by 1st Publishing). I have tried reformatting these disks with no success.

The second question or problem is: could you give details of how to link two C128s or a C128 and a C64 using the User Port, along with the required edge connectors.

The last question is regarding your article on the Okimate-20 colour printer. Is there any possible way of connecting this marvellous printer to my C128 and still retain all the features accessible to the Amiga or PC?

Brian Dunne

Dear Brian Dunne,

Sometimes unusable disks do reach the end-user. Best to return them to your supplier for replacement under guarantee.

Look at the User Port viewed from behind the computer. Pins 1 to 12 correspond to A to N. Connect C to M and M to C and A to A where the first mentioned is one computer and the second is the other. C thus represents Rx data in (received data) and M Tx data out (transmitted), both being inverted. A represents the ground connection. In terms of the RS232 D connector, this is equivalent to connecting Pin 2 to Pin 3, Pin 3 to Pin 2 and Pin 7 to Pin 7.

Re the Okimate-20 colour printer: This is not possible since this would require a new printer driver Rom on the interface card.

Dear Technical Editor,

With ref to your editorial in April's CCI on Plus 4. Because of lack of software for the Plus4 I invested in a C64. With my Plus4 I have a MPS803 printer and a 1551 disk drive and that is where my troubles begin. Before buying the C64 I read in the 1551 Users Guide on page 83 appendix E, "Use the C64 wedge if you have a Commodore 64". From that I thought I could use the 1551 on my C64. The plug on the C64 is a 25 contact cartridge fitting and no way will it fit the C64. I have toured my area and asked dealers and repairers if they can supply a C64 wedge or if it is possible for a 6 pin DIN plug to be fitted. Either they don't know or all they are interested in is selling me another disk drive. I have written to Commodore UK Ltd at Corby address five weeks and three weeks ago and now I find they are now in the Maidenhead area. As yet no dealer has given me their address. I am an old-age pensioner and have no wish to buy another disk drive because of the price etc. Can I ask for your help in where I can get an adapter or get a 6 pin DIN plug fitted. If it is possible to fit a 6 pin DIN plug, can I get the wiring diagram for the V fitting.

My son paid for me to go to Australia and they have a C64 and I was given a lot of diskettes, not games, which I was wanting to use. I use the Plus4 in my Club activities and it saves me a lot of work and I was hoping to extend that with the C64 and my 1551 disk drive.

Trusting you can help me and perhaps other Plus4 users who would want to obtain a C64 or C128 and have my problems.

F. Pottinger

Dear F. Pottinger,

The 1551 user guide is wrong. You cannot use the 1551 with the C64. The 1551 is not a serial RS232C drive and the 64 (which uses serial RS232C) cannot use this drive without an interface to convert serial to parallel.

Commodore's address is: Commodore House, The Switchback, Gardner Road, Maidenhead, Berks SL6 7XA. Tel: 0628 770088.

Dear Technical Editor,

I would be grateful for your advice on the choice of a printer in the £200-£250 range. I have a Vic-20 which I have used since it first came out many years ago. I have used a Vic-writer wordprocessor with a borrowed Vic printer. This printer was a poor dot-matrix, without true descenders, so is not suitable for producing

continued on next page

anything but draft copies.

You have recommended the Star NL-10 as being suitable for the C64/128 and Amiga. Will it be OK for the Vic-20? I have seen adverts for the NL-10 and the LC-10. Both appear to be about the same price, but what is the difference?

Eventually I hope to purchase an Amiga, and would therefore want a printer that I could also use on that. I would also want the printer to be suitable for the Vic-writer program.

Kevin W. Bennett

Dear Kevin W. Bennett,

The CBM MPS1000 is the only printer that will work with C64/C128/Vic etc and also with Centronics parallel. It has both interfaces built in and is based on the Epson LX86 but has only a small buffer.

Rumour has it that the MPS 1250 is soon to be released in the UK. This will replace the existing MPS 1200S (Serial) and MPS 1200P (Parallel).

This means that both interfaces are in the MPS 1250 and there is also a larger buffer. The MPS 1250 is based on the Citizen 120D.

Dear Technical Editor,

I have recently purchased a CBM 64, secondhand, and I have a problem with it.

When the computer is cold and I am using sprites (own made or in a game) there is shimmer on the left hand side of them. When it warms up it is even worse: the sprites become almost transparent, making game playing and sprite designing almost impossible.

When I put this to the previous owner he admitted that he used to reset the computer via the memory expansion port using a hair grip or a piece of wire!!!

Well, after a partial refund I decided to investigate the problem and indeed the reference guide does give a warning about such activities.

Knowing only what I have learnt in the last few weeks about hardware, software etc, and with a little help from the reference guide, I have discovered what I think to be the fault.

Now here's where I need your help. The fault appears to be a certain chip. Simple, you might say, just buy another one. But that's my problem: the chip has no number on it and so I would not know what to buy.

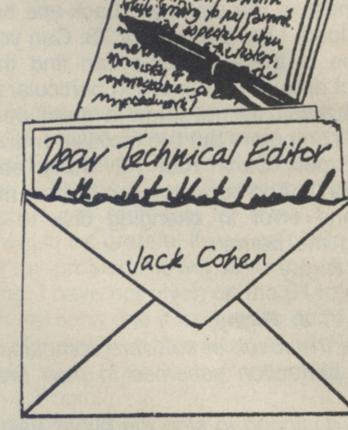
I have marked the said chip on the accompanying diagram, so please could you tell me the number of the chip and recommend a reliable place where I could acquire one, or if you disagree with my diagnosis what you believe to be the fault.

Ian Kendrew

Dear Ian Kendrew,

What you have described certainly points to the Video Display Chip. The number of it is not erased but it is hidden under what looks like white gunk, whose purpose it is to ensure good contact with the heat sink above. The chip number is 6569 and it is the Vic 2 chip which controls the Video display.

To obtain one try DB Electronics of Chelmsford (0245 260874) or Microport (01-953 8385 or 07783 6433):



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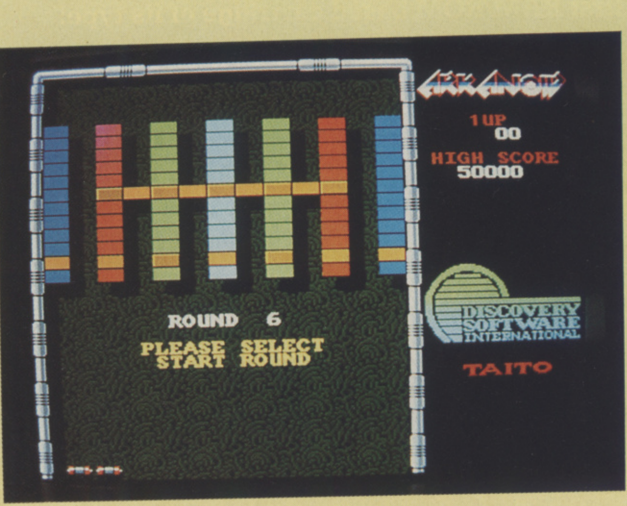
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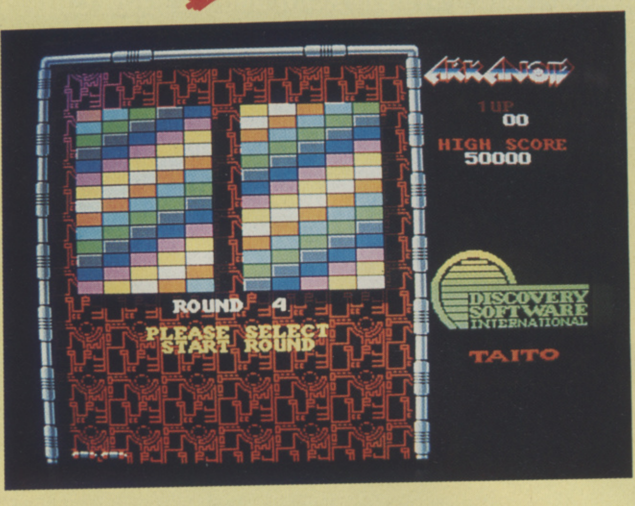
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Product	Company	Price
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Dialtext Comms Pack	Dialtext	£29.00
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Digital Link	Digital Creations	£65.00
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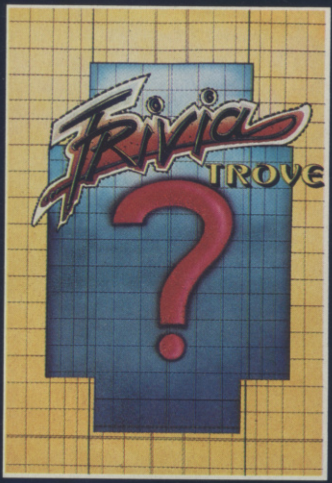
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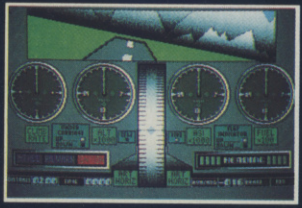

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Stealth

Sublogic

I am a responsible, mature family man. My next door neighbour is considerably more responsible, much maturer and he's even got a bigger family. We both own Commodore 64's, which we use for sensible, mature things like word processing, accounting, working out the Cricket Club averages, tabulating bell-ringing changes and so on.

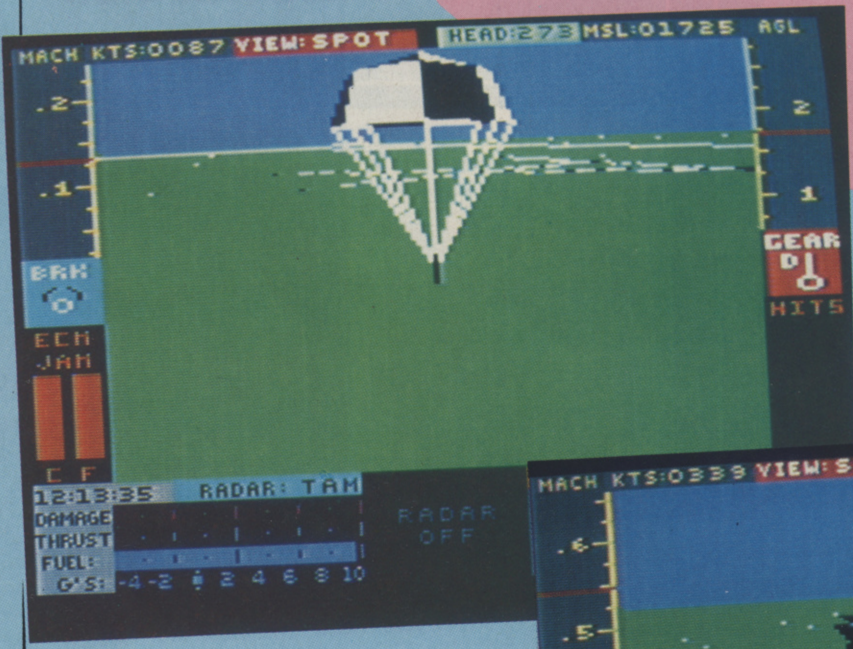
About three and a half years ago, my neighbour brought home a copy of "Flight Simulator 2", the C64 version of a program which was already established as a classic on a number of other machines. In common with a lot of other people, we both became flying addicts. After a number of 4 a.m. stumbles over the garden fence, I decided to invest in my own set of computerised wings.

I still load FS2 up for the occasional flip around the Statue of Liberty or to shoot up a few WW1 Fokkers. Those who know about these things say that the SubLOGIC program is about as realistic as you can get without actually getting behind the controls of a Piper 181 Cherokee Archer.

Stealth Mission is SubLOGIC's 1988 update of FS2. Instead of pottering about in a little private 'plane or doing the Biggles bit in a 1917 stringbag, you can take the controls of three of the latest American military jets. Stealth Mission offers you the option of the F-19 Stealth Fighter, the experimental forward-swept wing X-29 or the US Navy's F-14 Tomcat – all apparently still on the US "Secret" list.

The 'planes themselves are a lot easier to fly than that in the earlier program – at least, they are on the lowest of the nine skill levels. Multi-million dolla supersonic combat jets have computers on board! Establishing a straight and lev flight is one of my greatest problems with FS2. In Stealth Mission it is a piece of cake – one keypress and the on-boar computer will get you out of virtually any problem caused b your own ineptitude. It will not get the Fokkers off your back (well, MIG's this time actually) but that is a different story.

Before you can fly one of the eight available missions you have to arm your aircraft. In additon to 20mm cannon, you are offered a selection of six different missiles and four type of bomb. Up to eight of any one kind can be loaded, provided the aircraft's maximum paylo is not exceeded.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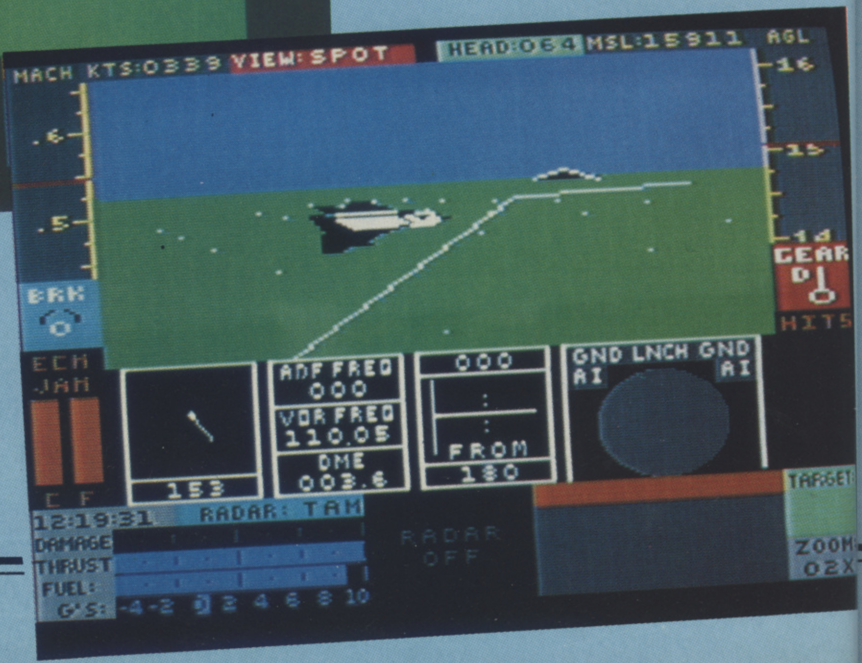
G'S:
RADAR OFF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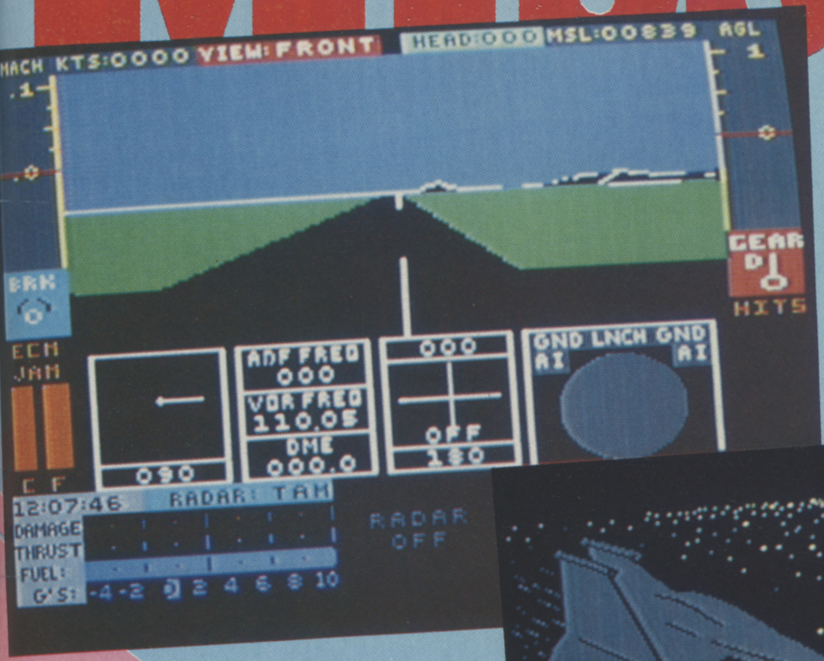
Mission



STEALTH MISSION

During flight, a variety of different viewing options is offered. You can look out of the window (forwards, backwards, upwards or to either side); you can look at a map which shows the aircraft's position: you can watch from the control tower of your home base or you can watch from a spotter plane which flies alongside you (naturally, you can alter the position of the spotter). Once you have fired a missile, you can even get a "missile's-eye view" as it heads for its target. All views give you the opportunity of zooming in and out for a better view.

The graphics are super, the ground moves under you with solid features changing shape as you pass, all the instruments are clearly legible and the horizon tilts alarmingly every time you make a mistake. SubLOGIC claim to have evolved a new 3D animation technique and the scrolling certainly seems a lot smoother.

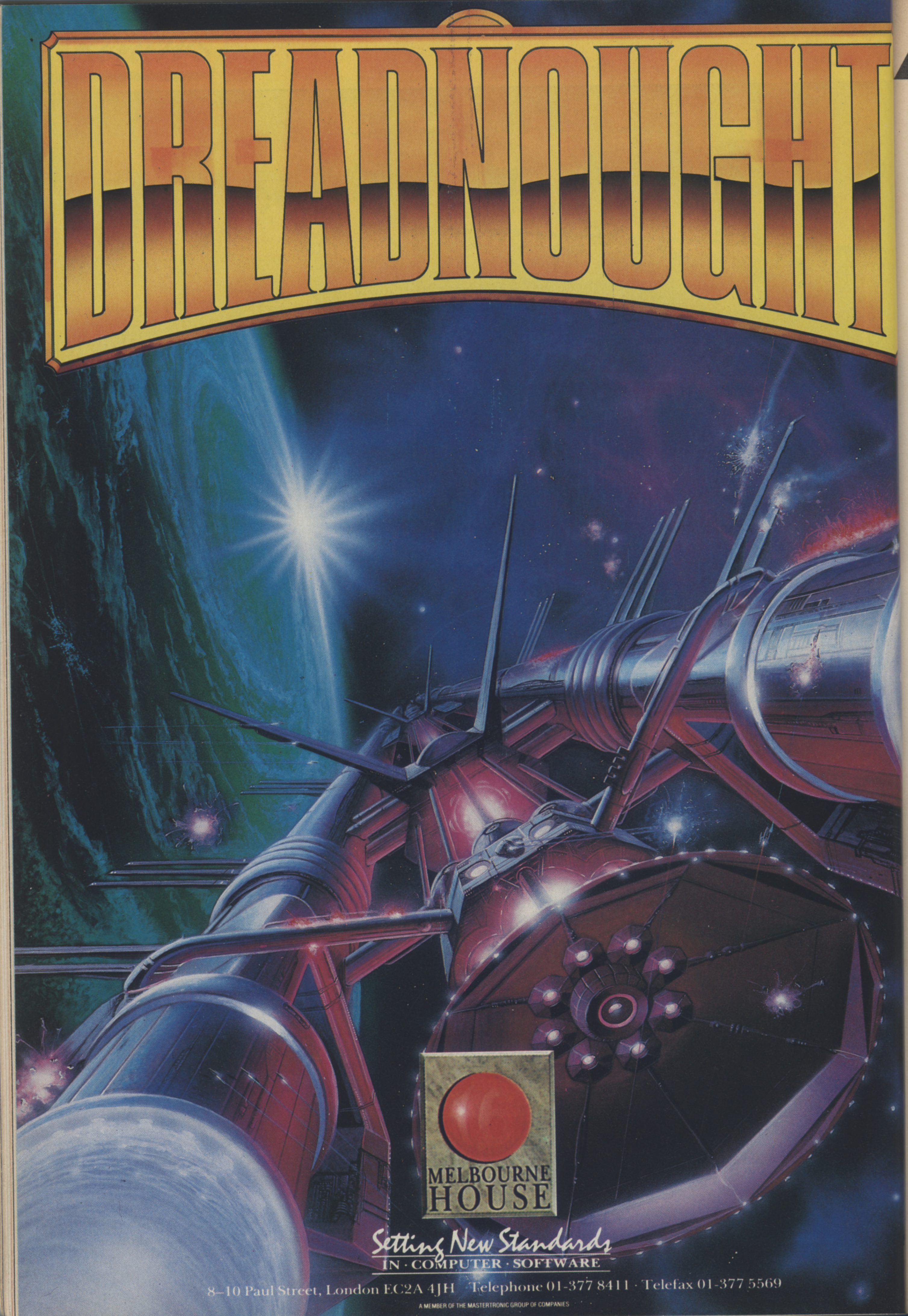
Attention to detail is superb. The sun moves around the sky as time goes by, but only during the day. At night it is the stars – recognisable constellations at that! There is even a dusk/dawn period when everything goes orange.

As for the belligerent bit, an on-board targetting computer helps you to locate and lock onto your targets. The Stealth Fighter has electronic counter measures to protect you from MiG's. SAM's and the like. As a last resort, you can bale out (it is best to switch to the spotter plane at this juncture so you can watch yourself eject and parachute to safety).

The aircraft are all equipped with Automatic Direction Finders. VHF Omnidirectional Rangefinders, Distance Measuring Equipment and Instrument Landing Systems. Learning to drive the Navigation systems could be a weekend's work in itself.

Like all involved programs. Stealth Mission takes a lot of getting used to. The 72-page manual has only one fault that I could determine – you can't keep it open at all 72 pages at once! It comes complete with a set of four maps to enable you to plan your missions and is a model for all software houses to emulate – clear and concise yet thorough. I see a lot of late nights ahead for a growing number of flying fans for this super Stealth Mission.

T.L.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Bargain Bucket

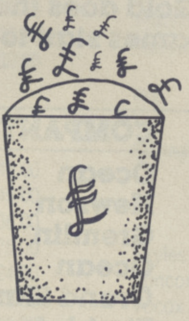
U.C.M. (M.A.D.): This takes cloning one step further than the norm. Not satisfied with copying the idea of Commando, the programmer seems to have gone as far as copying the sprites, pixel for pixel, from Commando. Replace the dusty backgrounds of Commando with some bas-relief panels, knock the playability down a few points and U.C.M. is your result. Like most cheapies, it is simple to pick up but interest peeters out in a short time.

Fight Night (Power House): Humour runs riot in this re-released boxing game. Using the construction kit you can build your own boxer, choosing from a range of heads, torsos, arms and legs. Next you can go to the training arena to get in shape before the fight. In the competition you are up against five boxers from around the world, each with a speciality move and style. It could do with a few more moves and a faster pace, but the big colourful graphics and cartoon-style characters make up for this.

Aquanaut (Power House): Once again The Power House come up with a graphically crude, unentertaining scrolly shooter. This time yu are at the controls of a submarine fighting off mutant jellyfish, squirmy curly creatures and most other things you would expect to find on a trip through an alien ocean. Swap the sub for a space ship and you have Tanium, Osmium or just about any other second rate cheapo blaster.

Rollerboard (Pirate): "A one player version of Kikstart played on a skateboard" is the best way to describe Rollerboard. Taking control of a porky kid skating along short horizontally scrolling courses, you can use jumps and spins to negotiate the obstacles. To look at it's blocky and disgustingly coloured but it can be fun for short periods of time. However, it does little to convey the excitement of real skateboarding.

Scout (Mastertronic): The simple inclusion of gravity in Scout separates it just enough from the Nemesis clones to make it worth while. Bouncing from platform to platform along the eight planets you seek out the four parts of your space ship. The action is fast and the blasting satisfying, just don't expect it to last more than a few days. But that's what budgets are for, right?



Osmium (Power House): Can't those lads at The Power House think of an original name for their games? Not only does Osmium sound like Tanium, it looks and plays almost exactly the same. This is more of a direct clone of the great Delta, though far inferior. The wobbling background does nothing but confuse and irritate, as does the whole game.

Subterania (Rack-it): This is by far the best looking zapper this month. Sixteen levels of underground buildings, bubbles and slime bring with them the usual formations of nasties. Without any major flaws in the gameplay, Subterania is a neat game but has nothing new to keep you interested. If yu feel the urge for a zap of the scrolling variety, this is certainly the best this month.

The Eidolon (Richochet): For those who like to indulge in a bit of exploration, the Eidolon will provide an extremely involving journey into a strange world. After stumbling across a 19th century invention allowing travel to mysterious worlds, you consult the accompanying papers and set off. Great 3D graphics simulate the adventure through monster inhabited tunnels. For a change from zapping aliens in space, check out The Eidolon.

Storm Bringer (M.A.D.): Storm Bringer is the last episode in the Magic Knight series. As in Spellbound, you play the part of Magic Knight but this time are out to stop an evil clone of yourself from killing you. With an easy to use menu system, different characters and objects are manipulated to progress through the game, giving it a strong adventure feel. It is really more of the same, so fans of Spellbound should find a lot to keep them occupied.

Tanium (Power House): Tanium is the first in a quartet of horizontally scrolling shoot 'em ups. In a totally unoriginal manner, the game takes you through waves of weaving aliens and weapon upgrades. Your ship is extremely slow to start with, making alien dodging just a matter of learning patterns. Graphics and sound seem to have had about five minutes spent on their design, which is more than the gameplay has. Give it a miss.

Charts

Chart Chatter

Not one, not two, but *three* new number ones this month! We don't want to say 'I told you so' (Well, we do really!) but we predicted the jet-speed rise of Target Renegade from Ocean and Hewson's Cybernoid – both bubblers last month. Now they are claiming Top Spot and Number two respectively. Gremlin makes a strong showing this month with two new chart entries – 10 Great Games at three and Venom Strikes Back coming in at ten. Ocean's Platoon is finally dethroned by the other Ocean mover but Grand Slam's Pacland holds on to its place at five. Firebird has an entry with the popular I.O. and Microprose's Project Stealth Fighter slips five places to seven. This month's bubblers to watch are both from Ocean (Surprise! Surprise!) both compilations – We Are The Champions and Konami's Arcade Collection. Budget style, there is a new leader. Steve Davis tops the real world snooker championship and hits Number One budget game too – a unique double for sure. Ghostbusters slips a place to second spot but we have two new entries Codemaster's Fruit Machine Simulator (what a title!) and ex-full price release Dan Dare from Mastertronic. The new Number One for the Amiga is no real surpise. Psygnosis have established a very bright reputation and their games get a hot welcome by Amiga owners everywhere. Their Obliterator deserves to shoot in at the top in the opinion of most Amiga players. But there are four new movers this month for the 16 bit machine. Ocean's Wizball hits second spot at first try. Activision get their first-ever chart hit for the Amiga with Gee Bee Air Rally and U.S. Gold does the same with Garrison II. Signs of the times when the big names start to chart at the 16 bit level.

GAME TITLE	COMPANY	PRICE	RATING
1 Target Renegade	Ocean	£9.95	Mega★
2 Cybernoid	Hewson	£9.99	Mega★
3 10 Great Games	Gremlin	£9.95	Mega★
4 Platoon	Ocean	£9.95	Awesome
5 Pacland	Grand Slam	£9.95	Mega
6 I.O.	Firebird	£8.95	Crisp
7 Project Stealth Fighter	Microprose	£14.95	Awesome
8 Ikari Warriors	Elite	£9.95	Mega
9 Predator	Activision	£9.95	Mega
10 Venom Strikes Back	Gremlin	£9.99	Iffy

Budgets

1 Steve Davis Snooker	CDS
2 Ghostbusters	Ricochet
3 Way of the Exploding Fist	Ricochet
4 Fruit Machine Simulator	Codemasters★
5 Dan Dare	Mastertronic★

Amiga

1 Obliterater	Psygnosis	£24.95★
2 Wizball	Ocean	£19.95
3 Xenon	Melbourne House	£19.95
4 Gee Bee Air Rally	Activision	£24.95★
5 Garrison II	U.S. Gold	£24.95★

★ NEW ENTRY

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C64

CRISP

Infiltrator II

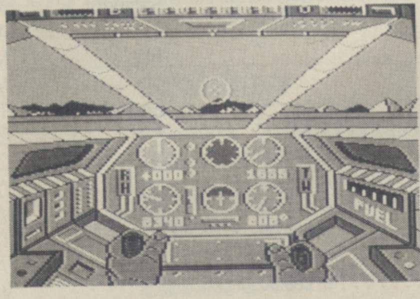
US Gold

How many power-crazy mad leaders can we take? What with Rolling Thunder, two episodes of Impossible Mission and now the second installment of Infiltrator, the heroes saving the world from them must be raking it in. This time it's the turn of Johnny "Jimbo Baby" McGibbits to avert world domination from a complete nut-case.

Two main sections make up your mission: helicopter flight simulation followed by the infiltration of the enemy base. If you think this sounds similar to the original, you would be amazingly right.

> *'With an impatient tapping foot, the guards browse through your forged papers, creating an atmosphere like that of the celluloid epic The Great Escape.'*

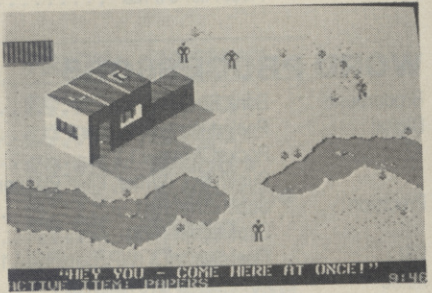
For a flight simulator, section one is very well presented. All too often flight sims rely on a keyboard full of controls for their challenge, with realistic, attractive graphics taking second place. Not so here; an interestingly detailed cockpit is rounded off neatly by a couple of animated hands on the controls. Programming your direction finder you set off to the enemy base. From time to time, planes fly overhead. You can then decide whether you think they are an enemy or ally and send out the appropriate codename. The alternative I favour is just to arm your heat-seeking missiles and blow them out of the sky whoever they are (saves a lot of messing around). One problem I found with flight sim was that the same routine of take-off and flight is required every time.



When you reach the base, put the chopper into whisper mode and set down in a nearby field. Part two is nwo loaded in, which takes years on the disk version (I can hardly see the cassette version being much longer). Here you have to make out you are one of the enemy. Security guards patrol the camp and call you over, demanding to see your ID. With an impatient tapping foot, the guards browse through your forged papers, creating an atmosphere like that of the celluloid epic The Great Escape. Most will be fooled, but some will smell a rat and raise the alarm. If this happens, you had better be quick on the draw with your can of sleeping gas.

Once inside one of the buildings you can begin to search for extra ammo, vodka and other items to help you on your way. Here the graphics look very much like those of the original Spy vs Spy. The sprites in the first Infiltrator were very poor in this part but have now been improved. That aside, hardly anything else has changed.

Only very minor changes have been made in the writing of the sequel. The flight sim has a new-look computer terminal, the camp layout is different, but these are really the only differences. I enjoyed the original a lot when it came out, and had I not played it, I would have enjoyed this just as much.

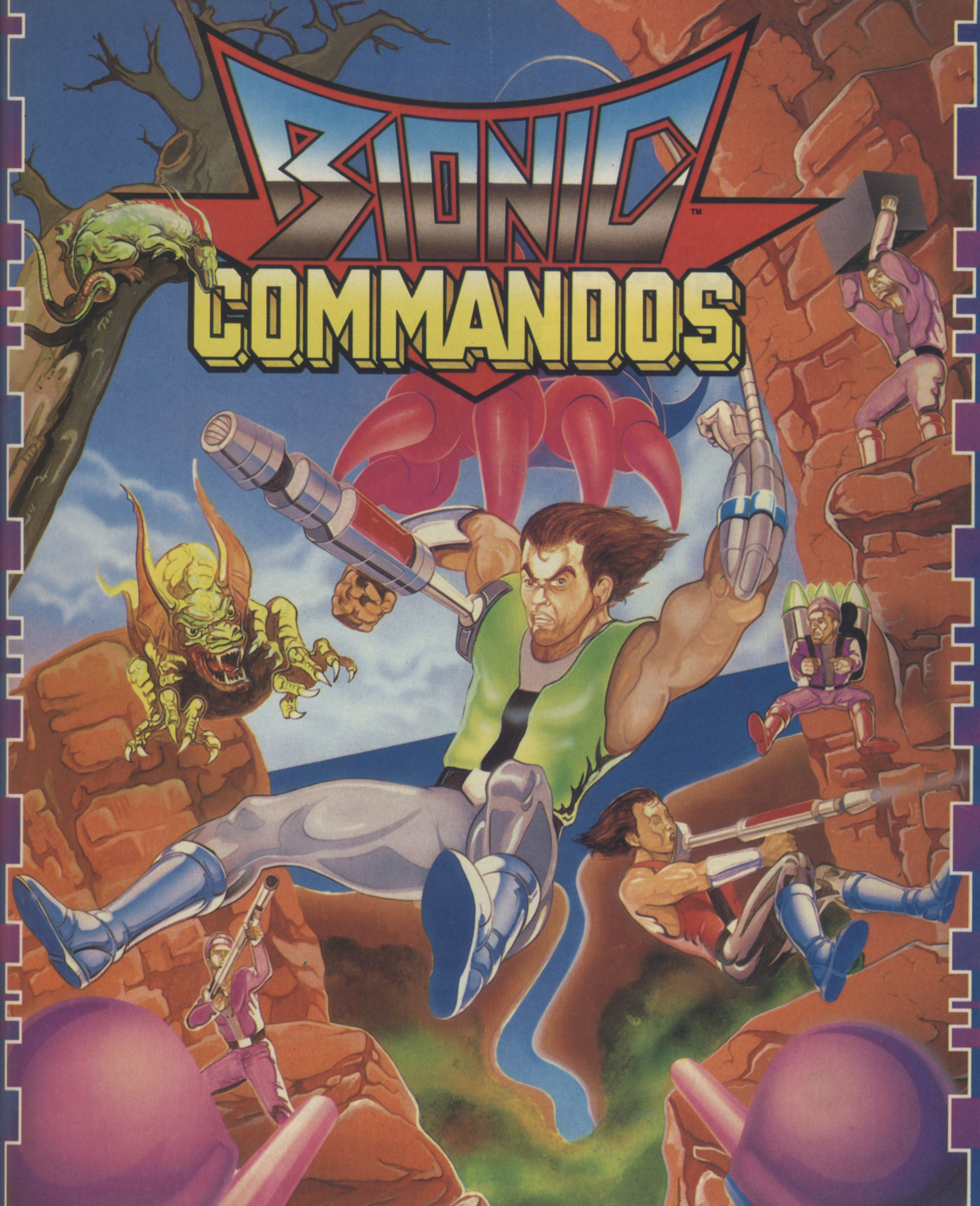

"HEY YOU - COME HERE AT ONCE!" 9:46
ACTIVE ITEM: PAPERS

The graphics start off pretty well but deteriorate through the game. As for the sound, nothing much stands out apart from the lift sound effect which is surprisingly convincing. Infiltrator 1 comes in the package, but as they are almost identical and the original is also on the Solid Gold compilation with Gauntlet, Ace of Aces, Winter Games and Leaderboard, it does seem overpriced. If you do not have the original and like the sound of it, Infiltrator II is worth considering as a highly enjoyable double game.

T.H.

***Prices:* £ 9.99 (cass)**
£14.99 (cass)

Graphics: 70%
Sound: 64;
Playability: 69%
Overall: 61%.
Rating: CRISP



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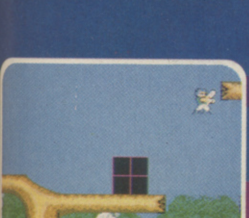

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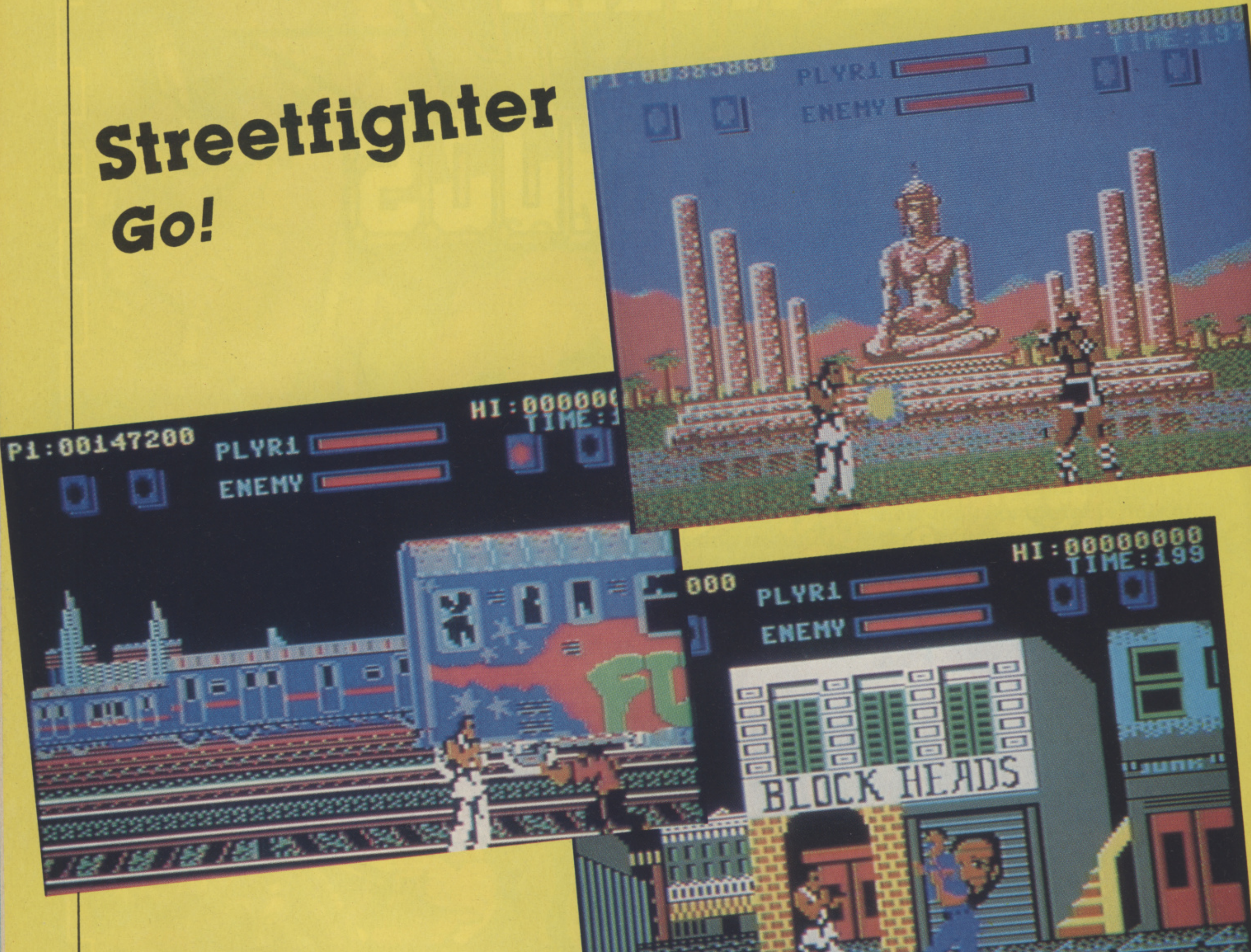
Streetfighter

Go!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BLOCK HEADS

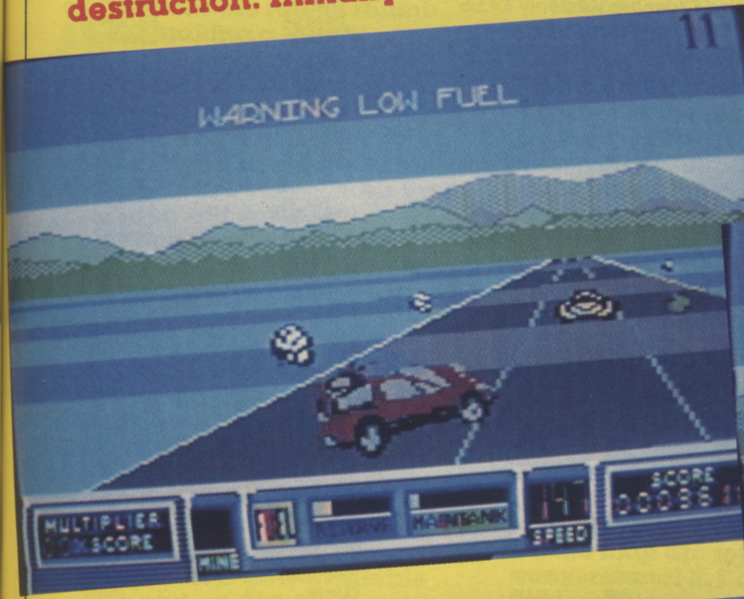
Further to their deal with Capcom, Go! are set to release the 64 and Amiga versions of the coin-op Streetfighter.

In the arcades, Streetfighter has a couple of crowd pulling features that make it stand out. Instead of the usual fire buttons, the coin-up has pressure pads that are pounded to land a hit on your opponent with as much power as possible. Its second eye catcher is the size of the characters which are a little on the large side to say the least.

Streetfighter takes you through five locations around the world as you pile into ten opponents all with their own styles. Looking at the 64 screenshots, the sprites do look a bit on the chunky side, so let's hope programmers can get the gameplay right. If the release date is anything to go on, it should be out on the 64 and Amiga.

Road Blasters *US Gold*

One of the best Pole Position variants to appear in the arcades must be Road Blasters. You take the controls of a high performance road blaster on a journey of destruction. Initially armed with a single shot cannon you blast your way through the traffic of cars, dragsters and bikes. Mines and road-side guns pose more problems.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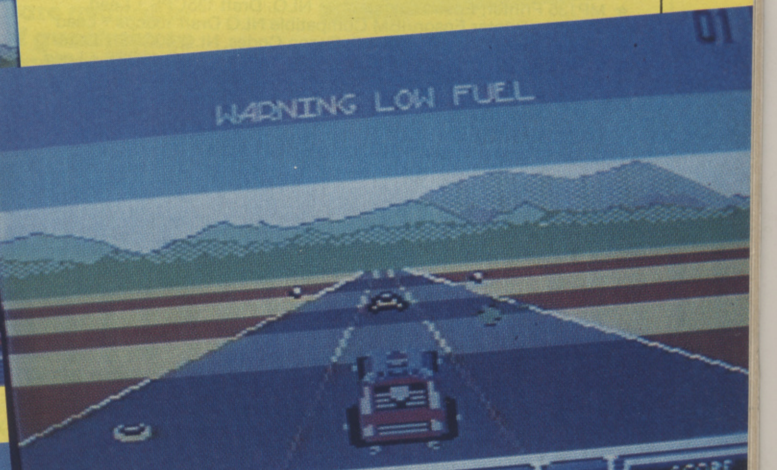
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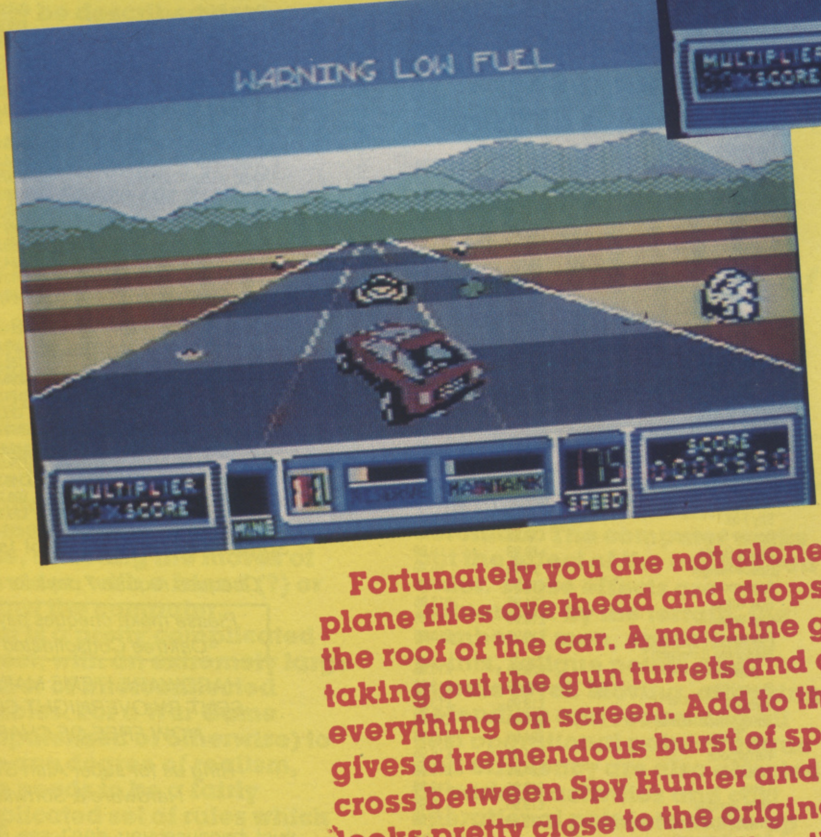
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SPEED
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Fortunately you are not alone. From time to time a plane flies overhead and drops weapons that lock onto the roof of the car. A machine gun comes in handy for taking out the gun turrets and a cruise missile liquidises everything on screen. Add to that a nitro injector which gives a tremendous burst of speed and you have a mean cross between Spy Hunter and Out Run. The 64 version looks pretty close to the original, and if they can capture the speed and feel of sliding the car round the bends, Road Blasters will make an excellent game. Look out for 64 and Amiga versions shortly. They may be sensational.

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Sons of Liberty

A reasonable rule of thumb for making a rought assessment of the thoroughness of a piece of "business" software is to count the pages of the accompanying manual. If you apply the same principle to the instructions for a game, you will come to the conclusion that Sons of Liberty from Strategic Simulations Inc is not something you are going to get the hang of in a few minutes.

"Playing time 3 to 12 hours", it says in small type on the end of the box! Now this has to be either totally absorbing or totally mind-numbing. If you are the sort that likes to buy a game, take it home, load up and play, then this is certainly not for you. It is only available on disk and, at £19.99, it can hardly be described as cheap. If, however, you are into computerised War Games, you will certainly want to add it to your collection.

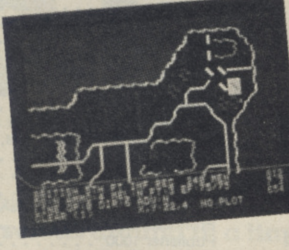
Sons of Liberty is a War Game set in the American War of Independence (or American Revolution, depending on your standpoint). There is a 32-page Rule Book and a 52-page Historical Reference Guide – both of which need to be studied carefully in order to get anything from the game. There is a choice of three battles, Bunker Hill, Monmouth and Saratoga. Each of these can be played at Basic, Intermediate or Advanced level. You can watch a demonstration game: play alone, directing the moves of both sides; with a friend (?) or against the computer.

War is a pretty complicated subject, with an extremely large number of interconnected variables. For a War Game (computerised or otherwise) to have any degree of realism, there needs to be a fairly complicated set of rules which are rigorously adhered to. It follows that a computerised War Game needs a rather intricate program.

In Sons of Liberty, each side has a variety of "units", corresponding to the actual troops/equipment that were present in the real life battles. These can be infantry, artillery or cavalry. Details are available as to the number of guns/men in the unit, their fatigue level, their position, their operational status and a number of other parameters.

Not surprisingly, the game consists of moving units around a battlefield and ordering them to be unpleasant to enemy units. The battlefield is represented by a screen display with two levels of resolution ("tactical" and "strategic". Notional hundred yard squares on the map are referenced by conventional X,Y coordinates and units are represented by appropriately-coloured icons – red for His Majesty's loyal forces and blue for the revolting colonials. The computer works out the effect of the actions you order. These effects are influenced by the terrain, the number of men, operational points, fatigue points and morale level. Moving, attacking, defending and recovering all cost operational points Fatigue and efficiency are also affected by various activities and cost operational points to make up (fatigue can be offset by giving the unit a rest). Operational points are reassigned during recovery phases. There are numerous other conditions, such as close combat rules, different types of armament, automatic advancing and retreating, the arrival of reinforcements, whether cavalry are mounted or not, double occupancy of squares and so forth. The Intermediate and Advanced games are progressively more complicated. The personalities of the Unit Commanders are even taken into account at the top level.

> *'The computer works out the effect of the actions you order. These effects are influenced by the terrain, the number of men, occupational points, fatigue points and morale level.'*



Each battle is fought over a given number of turns (each with several phases), representing the length of time which the real battles took. The British and American sides have specific target squares which they should attempt to occupy at the end of the hostilities – "victory points" are allocated for success in this objective as well as for casualties inflicted on the enemy during the course of the game.

As you might expect, Sons of Liberty puts quite a strain on the C64's meagre RAM (times change – remember the elephant ed?). There is frequent disk access, which puts the poor old 1541 under pressure. The documentation is thorough, as I have already mentioned, and the packaging is immaculate. You even get full colour copies of the battle maps for quick reference. SSI have built in a little protection routine that necessitates the presence of both books as well as the disk before you can play.

If you like games that make your brain ache – and a lot of people do – you will love Sons of Liberty. It is the best game of its genre that I have come across.

T.L.

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C64

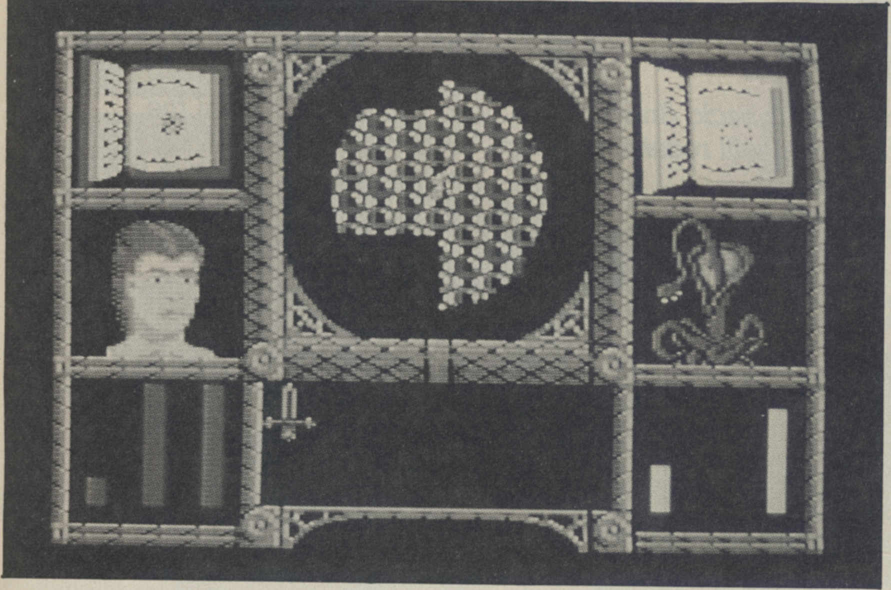
DODGY

Wizard Warz

Go!

It takes more than spells and wizards to make a decent computer game. Gauntlet, for example, took wizardry for a theme and developed it into one of the most popular coin-ops ever. Wizard Warz also takes a similar theme but the designers have forgotten to add the gameplay somewhere along the line.

Starting as a junior, your object is to progress through three levels, beat the seven greatest magicians in the world and so become the chief wizard. Before you can get stuck in, you have to select four spells.

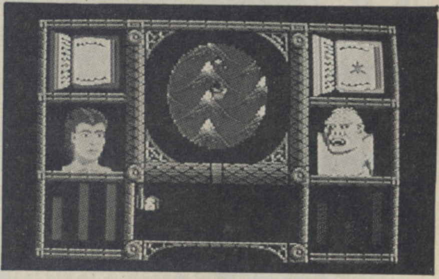


Level one involves defeating six monsters. When a monster has been killed, it submits a piece of treasure. Each piece belongs to one of the seven towns on the island. Returning treasure will earn you food to be eaten for strength after a battle. When all the treasure has been returned, the final town needs to be discovered which will take you to the next level. When you meet a monster, the location chances the combat map. Apart from avoiding the gaps in the map, this is just a simple shoot out of spell against spell.

> ***'When all the treasure has been returned, the final town needs to be discovered which will take you to the next level. When you meet a monster, the location chances the combat map'***

At first glance, the screen layout looks extremely attractive. Once you start playing you realise how small the actual play area is. The island scrolls around in a tiny circular window, jerking eight pixels at a time. Walking around the grasslands is fairly convincing, but snow-capped mountains (almost twice the height of Wiz) towns and forests can all be walked over as if they were just drawings of the ground.

The great majority of the first level is spent wandering around the island searching for new monsters and towns. The highlights of the game should be the spell casting scenes, but unfortunately these are almost as dull as the rest of the game. Later levels fail to improve on the weak gameplay. Music and sound effects are a rarity during the game, doing nothing to ease the boredom. Portraits of the monsters are decently drawn but all the rest of the graphics are very simple.



I cannot pretend wizards and magic are really my cup of tea, but even devoted Dungeons and Dragons type games would, I think, be hard pushed to squeeze out any satisfaction from Wizard Warz, I know I was.

T.H.

Graphics: 19%
Sound: 20%
Playability: 23%
Overall: 19%
Rating: DODGY
Price: £9.95 (C)
£11.95 (D)

HEWSON'S CYBERNOID

To celebrate the launching of its futuristic Cybernoid, its creators, Hewson are offering a super futuristic prize exclusively to C.C.I. readers.

By the time real Cybernoids arrive no doubt we shall be wearing mainframe-power computers on our wrists. In the meantime, we will have to be satisfied with laptop computers of today. Sir Clive Sinclair's new baby, the Z88, is the latest and smallest laptop around. Hewson have given us this super laptop for the winner of C.C.I.'s Cybernoid Competition.

The Z88 is compatible with the Amiga, too, so you can tap away anywhere and come home and put it up on your Amiga's screen, or you can use it alone and impress all and sundry.

All you have to do is answer these questions:–

1. *Who is the boss of Hewson?*
2. *Who is the programmer of the original version of Cybernoid?*
3. *Which train simulation was created by Hewson?*
4. *Which airport is the name of a Hewson game?*
5. *Name three recent Hewson shoot 'em successes (not Cybernoid).*
6. *What do Cybernetic and Cybernoid mean?*

Win a Laptop Computer!

Answers on a postcard please by July 15th 1988 to:–

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40 Bowling Green Lane
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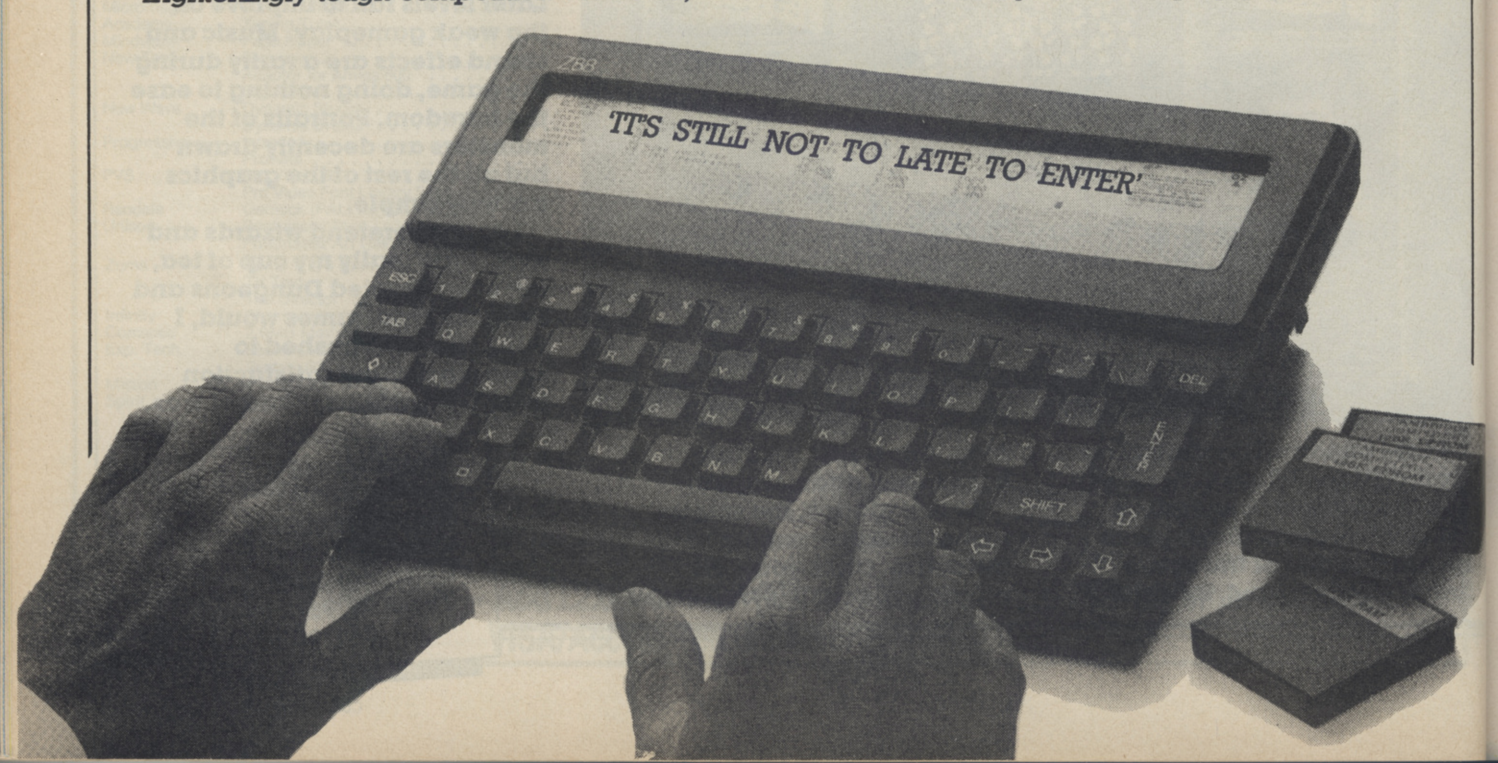
First correct answer out of the competition sack, drawn by the lovely hands of Teresa the frighteningly tough competition controller, will receive Hewson's Cybernoid Laptop prize.



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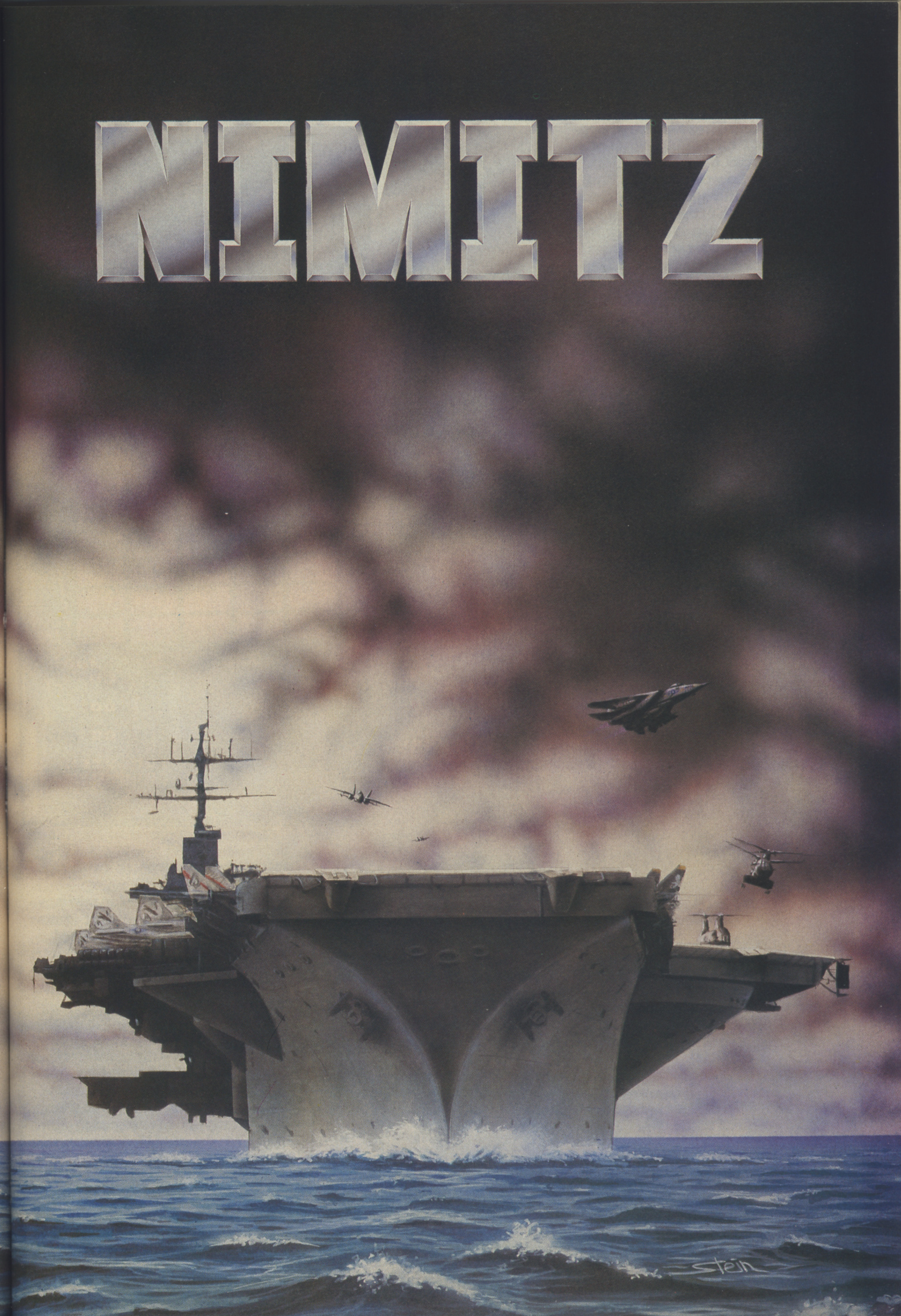
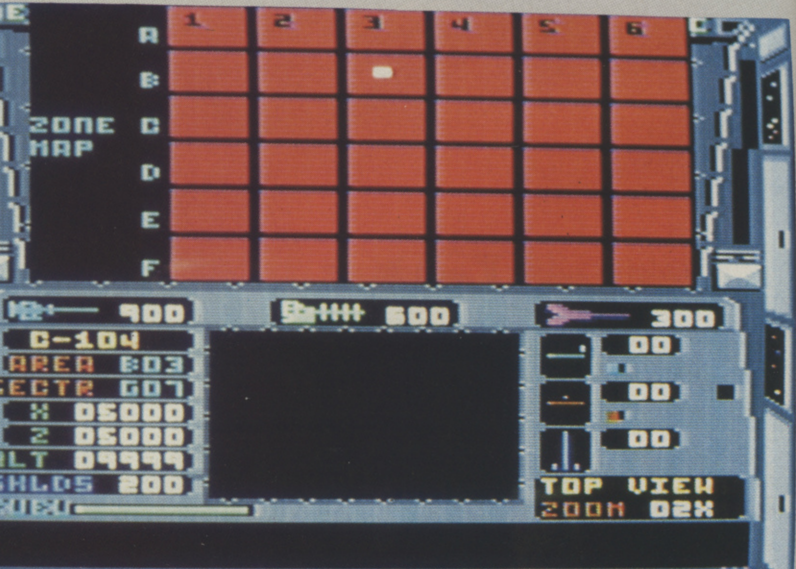

NIMITZ
Stein

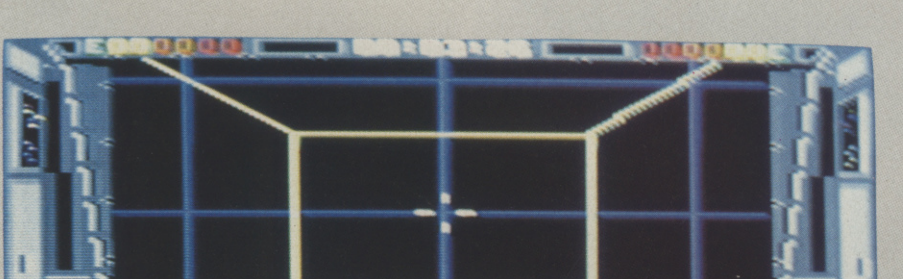
ECH

Access are well known for their smash hit leader board golf series, Andy Moss sees how their new space SIM Echelon shapes up.

Something of an exclusive here for CCI as ECHELON is not available over here yet, but noises have been heard regarding its new coding techniques and advanced state of the art graphics that have "taken America by storm". In our never ending quest to bring our readers the very best service, we have ob-tained a copy to see for ourselves just what all the fuss is about.

The first thing I should mention, is that on receiving the game I noticed that its authors included the revered Roger and Bruce Carver, creators of the now legendary Leaderboard golf simulations. Excellent I thought, with their pedigree this game has to be THE business. The second thing that caught my eye, was that the game contains the LIPSTICK voice activated control headset. Now, this little device, which is being marketed over here by US Gold, plugs into joystick port 2 and effectively replaces your fire button by using your own voice to shout "fire" or "launch". The computer takes this voice input and acts accordingly, all of which is designed for you to become more involved with your game software by adding a touch of realism to it. This is of course a novel and welcomed innovation, but I would like to point out that actual speech is not recognised, you can fire your weapons by saying "floppy disks" or anything you like, even blowing into the microphone will work (although not recommen-ded).

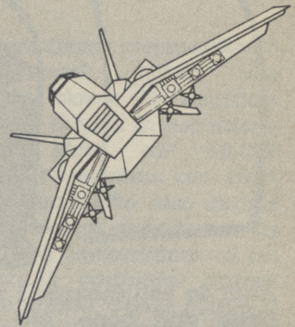




With all this innovation surrounding me, I was getting quite excited (which in the life of a software journalist is something of a rarity) so quick as you like in went the disk and ECHELON was up and running.

Billed as a 3D space flight simulator, ECHELON is in reality a game with three different modes. It is a flight simulator, that puts you behind the controls of your C104 spacecraft and gives a sort of 3D perspective wire frame view of the world of ISIS. You can fly and land anywhere inside the Patrol Zone, which is a partially explored area of 840 Kilometeres square. Within the zone are 36 smaller regions of 140 kilometres

ELON

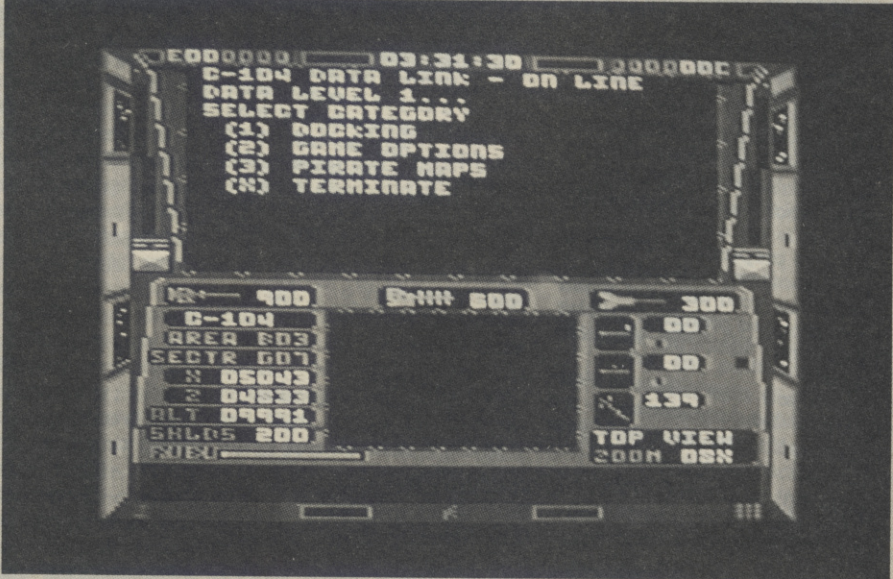


called AREAS (6 rows x 6 cols). Just to make it even more complicated for you, each AREA is sub divided into SECTORS of 14 x 14 cols and there are 196 sectors in each AREA. A map dividing everything into hex squares is provided for you to chart where you are and what you find.

> ***The actual game mission objective is, by a combination of all three modes, to find the location of the Space Pirate Stronghold, which is revealed by the use of not only fighting skills, but by the use of logic and brawn.***

The second mode is a pure arcade action scenario where you can battle against six different levels of enemy strength, or embark on five training courses designed to improve your skills against the clock. The third mode is an adventure/exploration scenario which lets you discover what is lying around on the planet and where the clues you need are hidden. The actual game mission objective is, by a combination of all three modes, to find the location of the Space Pirate Stronghold, which is revealed by the use of not only fighting skills, but by the use of logic and brawn.

The pirate base is somewhere inside the Patrol Zone and clues may be found on the objects or artifacts which you find on the planet. These essential items can be beamed aboard your craft (only when you are above them) and analyzed. They may contain writings and inscriptions, but these will be in Pirate Code. It is the deciphering of this code which will win you the game. Added to this is the problem of making the Base visible, as it is in the grip of a cloaking device which makes it invisible to scanners. There is a sequence of six steps that can be performed to deactivate the device, and provided the steps are performed in the right sequence all will be hunky dory. Each step is represented by a map, all six of which are present in your computers data link system (the file that is used when you wish to communicate with a command menu for saving), but the maps are empty to start with. As you find artifacts and gather info, the maps will slowly begin to take shape, until all will be revealed.



```
C-104 DATA LINK - ON LINE
DATA LEVEL 1...
SELECT CATEGORY
  (1) DOCKING
  (2) GAME OPTIONS
  (3) PIRATE MAPS
  (X) TERMINATE
```

According to the authors, there are 720 different combinations that are possible in the complex solution, and only one path is the right one!

All this information is fine I hear you ask, but is the game any good? The answer in the relatively short time I have had to play the game (I generally spend months!) is unfortunately no. The sound quality is non existent, and because of the complicated screen handling, the game plays very slowly. There are ways shown in the manual to remove certain graphics that make updating faster, but this seems to be a minimal increase. The graphics are ELITE/MERCENARY standard wire frame, which you either like or hate, but with very little sound, take on a rather detached feel.

It may be thought there is just too much built into the game really to get any enjoyment out of it which certainly seems a peculier criticism, I confess. It is almost as if the Carver brothers wanted to see just how much they could possibly fit into a Commodore and perhaps this vaulting ambition is what has reduced the game playing effect. Sorry to be the bearer of bad news but this is a real let down although I am sure that many will disagree with me and, who knows, Echelon could turn out to be a big a success as Leaderboard.

A.M.

Soopurrr Felix has returned !!!

PUSS
SUPER FELIX
CREAM

Aha! So you thought I was dead and gone, eh? All pussied out! Just shows how wrong people like you can be, doesn't it? I was just resting, chewing up a few mices (I like the exquisite taste of the left button) and doing all the lovely things that a pretty handsome super pussy can do. What? Well, of course, I'm not telling you!

You might be a spy from Crapp, Your Home Computer and Wine Maker, Amiga and Dragon Updating Agency or any other porno publication. But I will tell you that my sheathing my claws was a little ploy to get the rodents to crawl out of the woodwork and be pounced upon. And I propose to publish the letters of these bezprizorni which a Russian cat told me meant football hooligan-style computer abusers. Yes, all you wonderful readers out there are going to get the chance to read and scorn these blots on the Commodore landscape. First a certain C.L.B. Spencer (who shall be nameless) of Reading, Berks – they certainly are!

Dear Sir,
I like your magazine and buy it regularly. Following customary behaviour whereby, if something one likes is associated with something awful, it's awfulness is ignored, I, and your readers do not mention Super Felix's column. You confirmed this in your editorial.

Apart from Felix, some of your staff and those of his victims in the trade sufficiently interested, I am sure that your main readership have not a clue what, and particularly who, it is all about.

I was prepared to accept it as a necessary evil until I was stirred by your editorial when you dropped promised articles pleading lack of valuable space!

Do you ever read the Felix piece? Do you ever try to put yourself in the position of your average reader and see it with his/her eyes? Is it not one monster piece of self (or magazine staff) indulgence? Just look at the first section of the entry, indeed any of it and try to justify its occupation of "magazine space in high demand".

I have no wish to see Felix out of a job and I am sure he (it must be a he) is a competent journalist. The logo is jolly, if a little dated, and we all need humour. But really, is the trade recognisable enough to warrant a furry Nigel Dempster with an odd and decidedly loquacious sense of fun? Are you truly short of column space? This reader is not convinced.

Yours faithfully,
C. L. B. Spencer, Reading

Who is this so-called Spencer person? I hear you scream in horror. (I do, don't I?) Magazine space? Doesn't he understand that a 4 million page CCI would be necessary to print all the letters. 'I know you are all aching to write to welcome me back and beg to stroke my smooth fur?' A competent journalist? I will not crouch here for insults like that! I have instructed my solicitors Moss, Moss, Moss, Rob, Steal and Moss to sue immediately if not sooner. And I can just feel the tears in your eyes to hear me (my logo? What part of my anatomy is that?) described as "dated". As a result of this vicious and practical'y obscene (if a logo is what I think it is, you won't get around me by calling it 'jolly'!) poisonly penned letter, I have sent a copy to a certain chain store (Do you think their chains are really stylish?) in the High Street who have since informed me that from now on they will be known as "Marks and Felix" and offered me anything in the shop I would like. I have chosen to let the sweet readers of CCI benefit and anyone carrying a copy of this CCI who enters waves it and shouts "Spencer has a bug in his program! I claim my Super Felix prize!" can choose an item of free very software from the ladies' underclothes department. By the way, Mr. Cleverclogs Spencer, the next time you write a supposed letter to a Super Pussy make sure you get your spelling right! The way to spell "It's awfulness" is "its". No apostrophe, thickie! It is not an abbreviation but a possessive! Failed your English exam? I'm not surprised. Now for another of the plague-carrying rodent variety, another potential mass murderer, vandal and cat world polluter.

Dear Sirs,
I may only be the second person to say so, but I do believe that Super Felix is a waste of paper, otherwise it is a very good magazine.
Yours faithfully,
Mr. T. D. Pougher of Hull

A waste of paper! With a name like 'Pougher'! No doubt pronounced Poo-er, yuk! (Poo is a word we have never printed before in CCI. Sorry Mrs. Rogers.) Furthermore this is *not* a very good magazine! It is without question the best publication of any kind in the whole universe at least. How would you know anything anyway coming from Hull? That unfortunate place – known as 'orrific 'ull to everyone else in the world is notable only for educating an anthropologist called Stuart Greene (thought to have been eaten by a Sri Lankan cannibal called Romayne in darkest Finchley). It was also the starting point for the career of stage, screen and TV star (the ex of Max the Ad) the gorgeous Gillian ("A million pounds a show") Tompkins (now wowing them at the Arts Theatre in London. Go and see her! I get a commission on the tickets) and Hull is only known for one other notable event: a recent performance of Sweeney Todd, the Demon Barber, a gentle tale of mass murder and people being baked in pies directed by none other than Max the Ad himself. Violence, assassinations, rape, pillage and cannibalism, just the sort of thing that Hullovians –or whatever Poo-ers and such people are called – like.

Now of course, there are some civilised people in the world – not called Poo-er naturally or unnaturally. Unfortunately most of them do not live on this side of the globe. Their ancestors were no doubt transported from Reading and Hull to Down Under for stealing tadpoles to make stew for their starving kittens in the early 20th century. How do I know? Because this charming and sophisticated and doubtless handsome and brave reader, a certain William Walsh, wrote:

Dear CCI,
I am an engineer on a ship that runs from Australia to Hong Kong and have just started to develop an interest in computers from the other computer users on board.

I bought a copy of your magazine in Melbourne, Australia and found it really enjoyable and interesting reading and shall be a regular purchaser.

Your article on the Compact Disc Video was interesting but when I was on a ship running to Japan we saw CDV commonly available and that was over three years ago. They had one playing movies in the Henry Africa Bar in Yokohama. I have seen Superman the Movie so many times its not funny. However, since the sound was turned off I have only heard the movie once. The CDV players were very expensive then even for Japan. They were twice the price of video cassette players and I don't think they were selling all that well. The selection of movies was rather poor as well.

I also enjoyed the articles written by Super Felix, the super catty columnist. It's a pity I don't know who he's referring to but if I ever go to England I will know them by the knives in their backs.

Congratulations on a great magazine.
Yours sincerely,
William Walsh

Not a Right Charlie

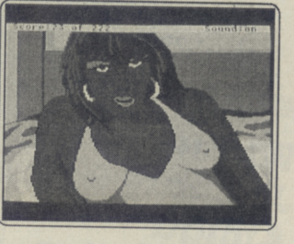
The city lights of Birmingham burn bright these days, a new star has been born – or made – in the glitzy world of Midlands software. Global TV is offering a starring role in the new impressionist – no not Renoir – Mike Yarwood-style – in the new series to be beamed on thousands of satellites called "All the Glittering Prizes are not Gold". Yes, U.S. Goldie's very own Ricardo (It's the way I play 'em) Tidsall has been forced to accept a cool million dollars by Epyx Mega Fox Productions to play the lead in a remake of "Charlie Girl". But the goldenhearted Tidsall has turned down the contract – taken the money though of course – for the place as co-driver in Outrun II said to be likely to head for the Charts in 1998. Keept at it, Richard, next year you can wear Cher's dress at the CCI Oskar presentation. Daniel Woodyatt is the one on the left. We think. (By the way, what splendid cheek! U.S. Gold is now exporting British games to America under the name of U.S. Gold! And is the story true that Tim Chaney is moving from Birmingham to Washington D.C. to be VP to next-President Bush? You read it here first, don't forget!)

Hair, hair, say all of us!

Now you may wonder why a certain shadowy organisation that tells computer magazines around the world what they can print about games and other important subjects is called Headlines. You thought it was to do with the words that go at the top of pages? Mee-ow! I can reveal in utter confidence that it refers to a strange peculiarity of the whiz kid boss of Headlines, 14 year old Simon Bristol-Cream. What is this strange peculiarity (can you have an unstrange peculiarity? Well maybe a PR person could). Well for you alone, reader, I am, at the possible risk of my whiskers – these PR people will stop at nothing – printing the very first authentic photograph of this terrifying computer industry Public Relations tycoon. It will become immediately apparent to you why the firm is called "Headlines" (I do hope the printer doesn't make a mistake and print this "Headlice"). Stewart Bell of Microprose, Stephen Hall of Grandslam and David Martin of Martech – all respectable software bosses – met him just once and look what happened to them! When the Headlines people say they want your account – they mean they want you – body and soul! Never fear, though, gentle reader, if you send me large amounts of cat food, I shall never introduce them to you.

There was once, of course, in the dim and very distant past about last August a notorious Lady Lesley Headlines. You may remember that Arab Sheiks used to shower her with gold bars (her hospital bills were enormous!). We sometimes ask ourselves whatever happened to her. There is a rumour that she joined some rich American's harem west of London but as about a million desperate CCI readers have

threatened to commit hara-kiri if I don't reveal the secret, I won't. Well, after a short spell in a sanatorium near Slough, England, Lesley Headlines has reappeared. Amazingly, she looks completely different. She has for some mysterious reason adopted a Scottish accent and has been immediately voted winner of "Most Beautiful Legs in the Computer PR Industry" Prize given at the recent Oscar ceremonies in Hollywood. When she strides down the corridors of CCI Towers in her micro-mini skirt, all 10,000 busybee workers are stopped dead. She also claims that she was once known as Melissa Ravenflame of an uncouth computer magazine called C&VG (Callous and Vicious Games) and forced to wrestle in mud (no, not the one on Virgin's cassette) and other similar computer-orientated sports. Now she has returned – it is amazing what these plastic surgeons can do – consorting with other PR – Pain Relief – people like the fearsomely-haired Simon. And no catty remarks (I'll make them, if you please) about beauty and the beast. Nadia Headlines, Simon's grandmother, has already said she doesn't know which would be which.



This is a picture from a computer sex instruction manual. You did not know that computers have – sorry are – of a sex and need instructions in it? Well, now you do. The manual, to be handled antiseptically, you never know where it has been, is published in France by a magazine called 'Tilt'. (Isn't that something you do with a pinball machine not members of the opposite computer sex?) Anyway this screenshot (posed for by the almost once nearly wrote something Paris correspondent of CCI, Nathalie Bardot) comes from a health warning game called 'L'Aides Memoires' ('Remembering Aids'). For the one or two CCI readers who are not perfectly fluent in French, the words below the picture mean 'It is dangerous to sleep with it doesn't matter whom'. Interesting English the French speak, isn't they? I personally wouldn't play a game like this with ten foot rubber gloves which has nothing to do with the ancient expression of Gay Paree, tu comprends? But not all CCI reviewers share the same outlook, I'm told. (Handy Moss is alive and well and living in San Diego with a computer called Carmen.)

We wish humbly to apologise for publishing a few months ago a photograph of a piranha biting a certain soft area of a computer company executive. We now hear that the fish has died and so has the software company called Piranha. Oh well, as they say in the software business, no doubt there are better fish in the sea – or in the catfood tin. What about a certain company called Pirates? I hear you cry. No relation, I believe, but those who live by the cutlass (with any luck) will . . .

Winners!

Winners of Frankenstein Competition

C. Swift
Bradford

A. Bowden
Takeley

D. Stephenson
Withernsea

J. Yourie
Ayreshire

P. Firth
Rotherhithe

A. Marney
London

K. Lovatt
Burkenhead

T. Cobbe
Leeds

D. Connor
Liverpool

P. Rayson
Birmingham

Winners of Newave Competition

M. Haigh
N. Yorks

J. Tyrell
Liverpool

B. Byrne
Birmingham

M. Horswith
Bournemouth

Winners of Gremlin's "Way of the Tiger" competition

P. Cheesbrough
Cumbria

G. Garbutt
Essex

G. Miller
Northants

R. Walker
W. Midlands

Winner of January Amiga Competition

C Bell
BFPO 40

Winners of US Gold Challenge Competition

J. Taylor
Huddersfield

B. Mooney
Tyne & Wear

P. Natisupalak
Italy

H. Holmdahl
Sweden

J. Aldersea
Staffs

M. Jones
Leics

T. Cobbe
Leeds

D. Laver
London

L. Wilmot
Tyne & Wear

D. Jackson
Barnsley

R. Walker
Dudley

I. Hawker
Moffat

Winners of Gremlins Deflector Competiton

A. Tate
Tyne & Wear

C. Garbutt
Essex

J. Moore
Derby

J. Malirowski
Lincolnshire

D. Baggot
Wales

Runner up prizes of Deflector Competition

V. Vasanth
Wigan

L. Razo
Mexico

D. Wakeley
W. Yorks

G. Bayliss
Fife

D. Simmons
Ipswich

J. Koaonwm
Finland

S. Bye
Middlesex

M. Jones
Leics

M. Darlington
Shroprshire

J. Yovnie
Basingstoke

A. Walker
Birmingham

S. Crane
Essex

M. Ginnelly
Middlesex

S. Hewison
Dyfed

D. Cotton
Leicester

R. Hunter
Mill Hill

A. Bowden
Herts

J. Consadine
Humberside

J. Sheppard
West Midlands

M. Rizzo
Malta

Winners of US Gold Sweatshirts

D. Hiscock
Essex

N. Coates
Northumberland

S. Crane
Essex

J. Archer
Newcastle-u-Tyne

S. Farmer
Surrey

M. Tipple
Tyne & Wear

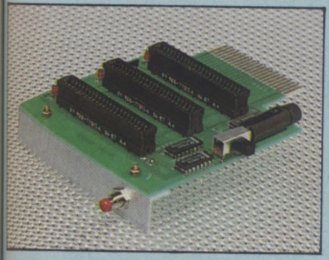
N. Campbell
Dunbartonshire

J. Gatesby
Herts

D. Norman
London

A. Diano
Italy

DATEL ELECTRONICS



3 SLOT MOTHERBOARD

Save wear and tear on your Expansion Port

☐ Accepts 3 cartridges. ☐ Onboard safety fuse.
☐ Switch in/out any slot. ☐ High grade PCB.
☐ Fully buffered. ☐ Reset button.

ONLY £16.99

DATA RECORDER

☐ Quality Commodore compatible data recorder.
☐ Pause control. ☐ Suitable for 64/128.
☐ Counter. ☐ Send now for quick delivery.

ONLY £24.99

SMART CART ™

Now you can have an 8K or 32K cartridge that you program like RAM then acts like ROM!

☐ 8K or 32K pseudo ROM.

☐ Battery backed to last up to 5 years (lithium battery).

☐ Simply load the program you require – then flick the switch. The cartridge can then be removed just like a ROM cartridge.

☐ Make your own cartridges including autostart types – without an EPROM burner.

☐ Can be switched on or off board via software.

☐ I/O 2 slot open for special programming techniques.

☐ 32K version has 4 x 8K pages.

☐ Some knowledge of M/C is helpful – but full nstruction are provided.

8K VERSION £14.99
32K VERSION £29.99

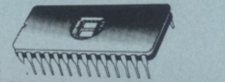
SMARTCART UTILITIES

series of utility programs for use with Smartcart. imply load in the program and you have a owerful cartridge. When you have a different equirement – load in another program and you ave a new cartridge. The process takes seconds, nd can be repeated any number of times.

e intend to release a range of rograms. The first available are:

DISKMATE II

☐ all the features of Diskmate II (see ad).
oaded in seconds – with full nstructions. **ONLY £9.99**



PRINTER IV

Now you can turn your MPS 801 into 4 printers in one!!

☐ Alternative character set ROM – fitted in seconds.

☐ All four sets have true descenders.

☐ 100% compatible with all software.

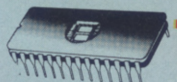
☐ Descender. ☐ Eclipse.

☐ Scribe. ☐ Future.

☐ Choose any set at the flick of a switch.

"For anyone who uses their printer often this chip is a must. It's quick and easy to use and the end results are impressive" – Your Commodore, Jan 87.

ONLY £19.99



TURBO ROM II

Turbo Rom II is a replacement for the actual kernal inside your 64. It provides superfast load/save routines.

☐ Loads most programs at 5-6 times normal speed.

☐ Saves at 5-6 times normal.

☐ Improved DOS support including 10 sec format.

☐ Programmed function keys:- load, directory, old, etc.

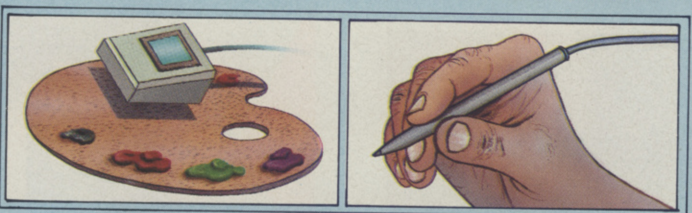
☐ Return to normal kernal at flick of a switch.

☐ FCOPY – 250 block file copier.

☐ FLOAD – special I/O loader.

☐ Plus lots more.

☐ Fitted in minutes – no soldering usually required. (On some 64's the old ROM may have to be desoldered). **ONLY £14.99**



BLAZING PADDLES

A complete lightpen/graphics illustrator package.

☐ A fully icon/menu driven graphics package of a calibre which should cost much more.

☐ Complete with a fibre optical lightpen system for pin point accuracy.

☐ Multi feature software including:
● Range of brushes ● Airbrush ● Rectangle ● Circle ● Rubberbanding ● Lines ● Freehand ● Zoom mode ● Printer dump ● Load/save ● Advanced colour mixing – over 200 hues!!
● Cut and paste allows shapes/windows/pictures to be saved to/from tape/disk.

☐ Blazing Paddles will also work with many other input devices including; Joysticks, Mice, Graphics Tablets, Trackball etc.

☐ Pictures can be saved from Action Replay and edited with Blazing Paddles.

Complete Blazing Paddles & Lightpen **ONLY £24.99**

Blazing Paddles available separately for **£12.99**

TOOLKIT IV

The ultimate disk toolkit for the 1540/1541

☐ A disk toolkit is an absolute must for the serious disk hacker. Toolkit IV has more features than most for less.

☐ DISK DOCTOR V2 – Read and write any track and sector including extra and renumbered tracks. Repair damaged sectors. Look underneath read errors.

☐ HEADER/GAP EDITOR – Decodes and displays ALL header information including off bytes and header gap. Rewrite the entire header and header gap. Renumber sectors. Also edit any sector tail gap.

☐ DISK LOOK – Sort directory. Recover lost files. Display file start/end addresses. Disassemble any file program directly from the disk to SCREEN or PRINTER including undocumented opcodes. Edit Bam. Much, much more.

☐ FILE COMPACTOR – Can compact machine programs by up to 50%. Saves disk space. Compacted programs run as normal.

☐ FAST DISK COPY – Copy an entire disk in 2 minutes or less using single 1541.

☐ FAST FILE COPY – Selective file copy. Works at up to 6 times normal speed.

☐ FORMATTER – 10 second format an entire disk or format any individual track or half track 0 to 41. Redefine any of 30 parameters to create or recreate unique disk formats.

☐ ERROR EDIT – Quickly find and recreate all read errors including extra and renumbered tracks or sectors and half tracks from 0 to 41. Even recreates data under errors and allows you to redefine any necessary parameters.

ONLY £9.99

RAM DISK

☐ Turn your Smart Cart into a 32K RAM/disk.

☐ 32K of instant storage area for files/programs.

☐ Load/save instantly.

☐ Disk type commands: load, save, directory, scratch.

☐ Program data retained when computer is switched off!

☐ Full command set with instructions. **ONLY £9.99**

ROBOTEK 64

Model & Robot Control made easy

☐ Robotek 64 is a comprehensive hardware/software package which enables you to connect your 64/128 to the outside world.

☐ 4 output channels – each with onboard relay

☐ 4 input channels – each fully buffered TTL level sensing.

☐ Analogue input with full 8 bit conversion.

☐ Voice input for voice control.

☐ Software features:- test mode/analogue measurement/voice activate/digital readout etc.

☐ Excellent value! **ONLY £39.99** including hardware/software/mic etc. (State tape or disk)

DIGITAL SOUND SAMPLER

☐ The new sampler allows you to record any sound digitally into memory and then replay it with astounding effects.

☐ Playback forwards/backwards with echo/reverb/ring modulation etc.

☐ Now with full sound editing module to produce outstanding effects.

☐ Full 8 bit D to A and ADC conversion.

☐ MIDI compatible with suitable interface. (I.e. Datel unit for £29.99, see ad).

☐ Live effects menu includes real time display of waveforms.

☐ Line in/mic in/line out/feedback controls.

☐ Powerful sequencer with editing features.

☐ Load/save sample.

☐ Up to 8 samples in memory at one time.

☐ Tape or disk (please state).

☐ Complete software/hardware package **£49.99**

☐ Com-Drum software is available separately at **£9.99** to turn your Sampler II into a Com-Drum system as well as a sampling system.

COM-DRUM

Digital Drum System

☐ Now you can turn your computer into a digital drum system. ☐ Hardware/software package.

☐ 8 digital drum sounds in memory at one time.

☐ Complete with 3 drum kits.

☐ Real drum sounds – not synthesised.

☐ Create superb drum rhythms with real and step time. ☐ Full editing. ☐ Menu driven.

☐ Output to hi-fi or through tv speaker.

☐ Load/save facilities.

ONLY £29.99 (state tape or disk)

COM-DRUM EDITOR

☐ 24 drum sounds supplied on disk to enable you to construct your own drum kit.

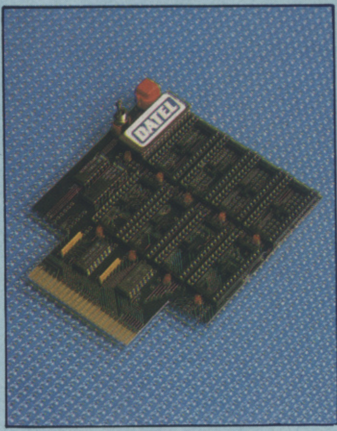
☐ Re-arrange sounds supplied with a Com-Drum to make new kits.

☐ With sound sampler hardware you can record your own kits. ☐ Load/save facilities.

ONLY £4.99 disk only

DATEL ELECTRONICS

256K SUPEROM EXPANDER



☐ Now you can select from any of 8 32K EPROMs instantly.

☐ 8 sockets to accept upto a 32K EPROM in each.

☐ On board operating system – no programs to load.

☐ Program your own EPROMs using our EPROM programmer.

☐ No need to have loads of cartridges – just make a selection from the Superom menu.

☐ Directory of utilities on power up.

☐ Fully menu driven on power up.

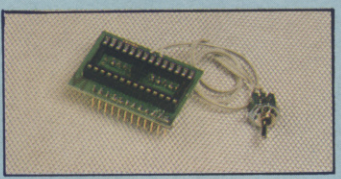
☐ Select any slot under software controls.

☐ Unique EPROM generator feature will take your own programs – basic or m/c and turn them into autostart EPROMs. (EPROM burner required).

☐ Accepts 2764/27128/27256 EPROMs.

☐ On board unstoppable reset.

ONLY £29.99



4 WAY KERNAL BOARD

☐ This board fits in place of the kernal in your 64 and accepts a 16K or 32K replacement kernal giving 2 or 4 different operating systems.

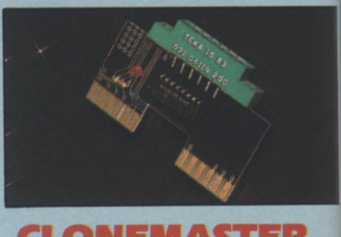
☐ Just flick the switch supplied to select between systems.

☐ This is a carrier only – ready to accept your own chip.

☐ Now you can have all your different systems available at one time.

ONLY £8.99

5 WAY BOARD **ONLY £12.99**



CLONEMASTER™

☐ Makes tape to tape back-ups.

☐ Works with even Turbo Loaders etc.

☐ Requires access to two CBM type data recorders.

☐ Makes perfect copies.

☐ Very simple to use.

☐ LED level indicator.

ONLY £9.99 POST FREE

RESET CARTRIDGE

☐ Unstoppable reset button.

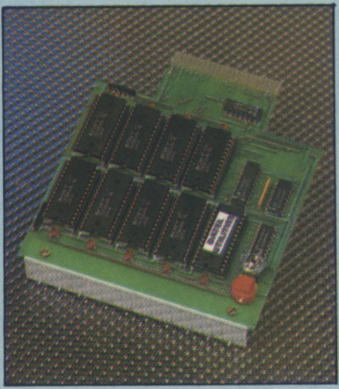
☐ Resets even so called "unstoppable" programs.

☐ Add pokes from magazines etc.

☐ Fits in cartridge port.

☐ Simply plug in.

ONLY £5.99



DUPLIKATOR™

☐ Copies whole disk in one pass – only one drive required!

☐ Makes back-up copies in eight seconds!!

☐ Duplikator is the fastest, most efficient and easiest to use disk copying system ever conceived.

☐ Comes complete with 256K on-board ram and it's own operating system – no software to load.

☐ Makes multiple copies from one original.

☐ Full disk verification during back-up process.

☐ Copies standard software as well as errors 21-29 and upto 40 tracks.

☐ Full disk error check in eight seconds.

☐ Full disk verify against ram in fifteen seconds.

☐ A must for clubs, user groups etc. How else can you copy over 250 disks and hour for less than £100.

☐ Comes complete with on/off switch and reset button.

☐ Fitted in minutes – no soldering usually required.

ONLY £89.99

DEEP SCAN BURST NIBBLER™

☐ The most powerful disk nibbler available anywhere, at any price!

☐ Burst Nibbler is actually a two part system – a software package **and** a parallel cable to connect the 1541/1570/1571 to 64/128 (state type).

☐ What gives Burst Nibbler its power? Conventional nibblers have to decode the data from the disk before it can transfer it using the serial bus – when non standard data is encountered they are beat. Burst Nibbler transfers data as raw GCR code via the parallel cable without the need to decode it so you get a perfect copy of the original.

● Will nibble upto 41 tracks. ● Copy a whole disk in under 2 minutes. ● Full instructions.
● Regular updates – we always ship the latest. ● Fitted in minutes – no soldering usually required.
● Full or ½ tracks. ● No need to buy parallel cable if you have Disk Demon/Dolphin etc.
● Cable has throughbus extension for other add ons.

☐ Whether to choose FastHack'em or Burst Nibbler? Fast Hack'Em is unbeatable value as an "all-rounder" – with nibblers, 1 or 2 drive copy, format, file copy, 1571 copy etc. etc., so if you have a more general requirement perhaps FastHack'Em is for you. Burst Nibbler is a pure nibbler second to none, for the reasons stated. So if it's just making backups you are interested in, there is no other product to beat it.

ONLY £24.99 COMPLETE

SOFTWARE ONLY £12.99 CABLE ONLY £14.99

EPROMMER 64™

☐ A top quality, easy-to-use EPROM programmer for the 64/128.

☐ Fully menu driven software/hardware package makes programming/reading/verifying/copying EPROMs simplicity itself.

☐ Will program 2716, 2732, 2764, 27128 and 27256 chips. 12.5, 21 or 25 volts.

☐ Fits into user port for maximum compatibility with cartridges/Superom Board etc.

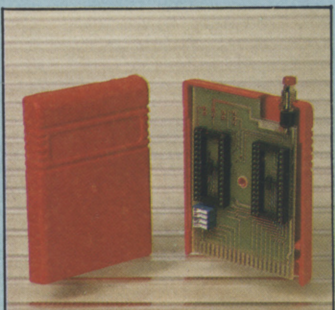
☐ Full feature system – all functions covered including device check/verify.

☐ We believe Eprommer 64 is the most comprehensive, most friendly and best value for money programmer available for the 64/128.

☐ Ideal companion for Superom Board, Cartridge Development System, our kernal expanders or indeed any EPROM base project.

☐ Comes complete with instructions – plus the cartridge handbook.

ONLY £39.99 COMPLETE



16K EPROM BOARD

☐ Accepts 2 x 8K EPROMs.

☐ Switchable to configure as 2 x 8K or 16K or off.

☐ On board unstoppable reset.

☐ Full instructions.

ONLY £8.99

DISK NOTCHER

☐ Quickly and easily double your disk capacity.

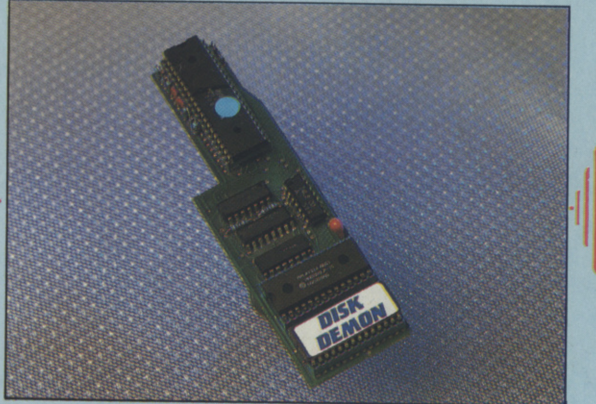
☐ Use both sides of your disks.

☐ Simple to use.

☐ Takes seconds.

ONLY £4.99

DATEL ELECTRONICS



PROFESSIONAL DOS ™ MIKROTRONIC

£64.99 POST FREE with Disc Demon operating system

"The world's fastest parallel operating system"

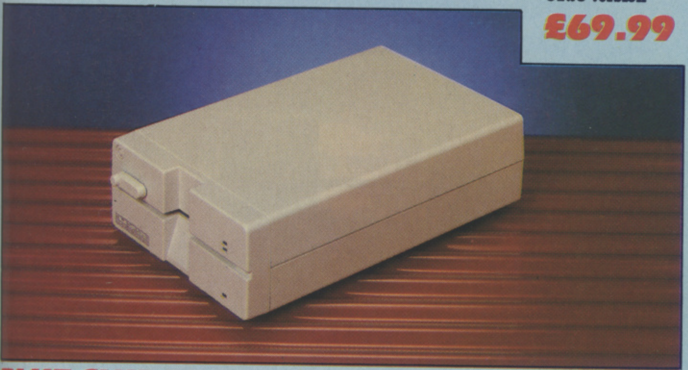
- ☐ Loads a typical 202 block program file in under 3 seconds!
- ☐ 60x faster load (PRG files).
- ☐ 25x faster load (SEQ files).
- ☐ 20x faster save (PRG files).
- ☐ 20x faster save (SEQ files).

PLUS AN ADVANCED COMMAND STRUCTURE INCLUDING:

- ☐ Fast format – up to 40 tracks (749 blocks).
- ☐ 16 function keys: list, run, load, directory, format, save, old, verify, etc.
- ☐ Fload will fastload files up to 250 blocks (other similar systems will only cope with 202 blocks).
- ☐ Number conversion. ☐ Reset.
- ☐ Unique built in file copier will copy files up to 250 blocks like lightning – multiple copy options - perfect for copying Action Replay files.
- ☐ Highly compatible with commercial software - can be switched out for non compatible programs.
- ☐ Perfect for use with Action Replay 3 – a typical AR3 backup will reload in about 3 seconds - yes 3 seconds!
- ☐ Speeds up other DOS functions including verify, scratch etc.
- ☐ Comes complete with superfast file and whole disk copier free!
- ☐ Screen on or off during loading.
- ☐ Enhanced command set – over 30 new commands.
- ☐ Easily fitted – Disk Demon plugs inside the 1541 and the new operating system chip plugs inside the C64/128. Fitting takes only minutes and usually requires no soldering.
- ☐ User port throughbus supplied free – you could pay £15.00 for this alone.
- ☐ Supplied complete – no more to buy.
- ☐ Works on C128/1541 in 64 or 128 mode.

C128 version

£69.99



BLUE CHIP DRIVE

● Fully C64/128 compatible.

- ☐ At last a top quality drive at a sensible price.
- ☐ Super slimline case
- ☐ External power supply for cool operation.
- ☐ Direct drive motor.
- ☐ Supplied complete with all cables - no more to buy.
- ☐ This drive is now probably the most compatible drive available for the Commodore. More so than even Commodores own '1541C. Much more so than other so called compatibles. In fact we have been unable to find a program including the latest that would not work. (At time of Press).
- ☐ **No need to look elsewhere – this is the best.**

ONLY £139.99 POST FREE
(If you require courier delivery add £5.00).

ULTRA CRUNCHER

● The ultimate cartridge based program compactor.

- ☐ Compacts by upto 30%!
- ☐ More programs for disk.
- ☐ 3 compacting programs on one cartridge.
- ☐ Fast loading/saving routines – works with Disc Demon.
- ☐ Can even further compact AR III files!
- ☐ 250 block file copy function.
- ☐ Full DOS support including fast format.

ONLY £12.99 on cartridge.
Available as chip only for 256K Superom Board for only £7.99

FAST HACK'EM ™

● Multi Module Disk Nibbler – all on one disk.

- ☐ Single 1541 Nibbler – Copy a disk in 2 minutes.
- ☐ Auto Nibbler – Copy an entire protected disk in 3 minutes.
- ☐ Super fast File Copy – Under 9 seconds typically.
- ☐ Copes with Fat Tracks.
- ☐ Superfast Copy – Entire disk in 36 seconds with verify.
- ☐ Twin Drive Copier – Even faster!
- ☐ Plus unique "Parameters" mode. These files "Unlock" the more heavily protected programs with a parameter for a particular brand or even single program.
- ☐ **No other product is such a good "All Rounder" at this price its unbeatable.**

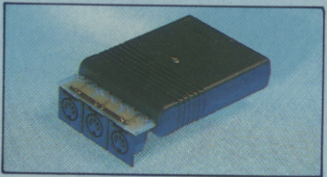
ONLY £9.99 POST FREE

DISKMATE II

The Disk Utility Cartridge

- ☐ Disk fastload cartridge.
- ☐ Up to 5 times faster.
- ☐ Fast save. ☐ Fast format (10 secs).
- ☐ Improved DOS – single stroke commands – load/save/dir/old etc.
- ☐ Redefined function keys for fast operation of common commands.
- ☐ Powerful toolkit commands including: old/delete/merge/copy/append/autonum/linesave etc.
- ☐ Plus a full machine code monitor – too many features to list but it has them all!
- ☐ Special switching techniques make Diskmate invisible to the system. Therefore it is a more compatible fastloader than other types.
- ☐ Diskmate II is

ONLY £14.99



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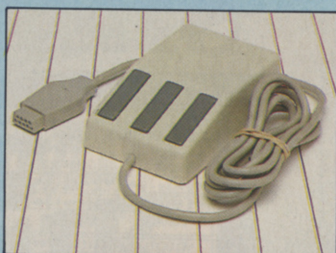

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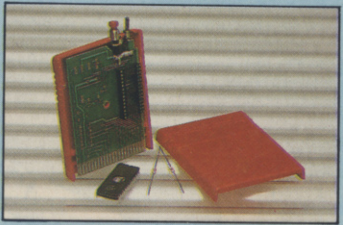

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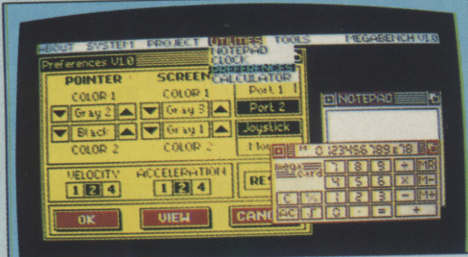
ABOUT SYSTEM PROJECT UTILITIES TOOLS MEGABENCH V1.0
Preferences V1.0
POINTER
SCREEN
COLOR 1
Gray 2
Black
COLOR 2
Gray 3
Gray 1
Port 1
Port 2
Joystick
VELOCITY 1 2 4
ACCELERATION 1 2 4
OK
VIEW
CANC
NOTEPAD
CLOCK
PREFERENCES
CALCULATOR
NOTEPAD
0123456789

THE FINAL CARTRIDGE III

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Comfortable ML MONITOR including 1541 drive access and sprite-editing, a NOTEPAD/WORDPROCESSOR with proportional characters, 2 DISK LOADERS with speeds, up to 15 times faster and a state of the art FREEZER. Transform your Commodore into a complete new - AMIGA LOOK ALIKE - system.

Reset
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Freezer
RESET
ARTRIDGE III
and 010-4231982
RESET
RIDGE III
4231982
FREEZE
THE FINAL CAR
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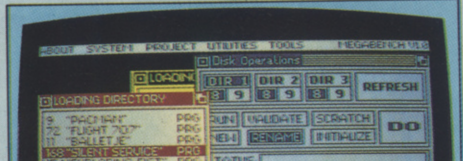
WINDOWS


ABOUT SYSTEM PROJECT UTILITIES TOOLS MEGABENCH V1.0
Disk Operations
LOADING
DIR 1
DIR 2
DIR 3
REFRESH
LOADING DIRECTORY
9. "PACMAN" PRG
72 "FLIGHT 707" PRG
11 "BALLETJE" PRG
188 "SILENT SERVICE" PRG
154 "EXPLODING FIST" PRG
57 "HE-MAN" PRG
18 BLOCKS FREE.
RUN
VALIDATE
SCRATCH
NEW
RENAME
INITIALIZE
DO
STATUS
ROM
DOWN
DIR 1
UP
DIR2
UP

THE FINAL CARTRIDGE III

The high-resolution bit mapped windows are selected from a menu bar. An unlimited number of windows can be open on the screen at the time. The windows can be freely moved on the screen.

The following windows are already implemented in ROM:

PREFERENCE WINDOW
Selects: mouse port, joystick port, mouse speed, screen colours, pointer clours, keyboard click, keyboard repeat.

CALCULATOR
Complete simulation of a LCD-calculator. Input either with mouse, joystick or keyboard. The numeric key-pad of the C128 can be used in C64-mode.

NOTE PAD
Easy to use wordprocessor with proportional characters enables you to store and print small notes, letters, etc.

DIRECTORY WINDOWS
Enables you to open directories from different disks and drives, sort and print directories.

DISK WINDOWS
Load, Run, Rename, Validate, Scratch, Initialize, Fast format disks.

TAPE WINDOW
Activates fast and normal modes.

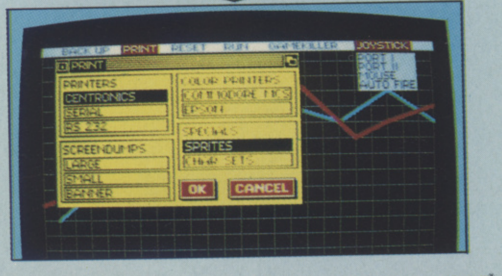
PRINTER WINDOWS
Select different printers, such as Commodore serial, Centronics, RS 232, Colour printers.

REQUESTER WINDOWS

DISC BASED USER WINDOWS

CLOCK
Real Time Clock, with Alarm.

FREEZER MENU


BACK UP PRINT RESET RUN GAMEKILLER JOYSTICK
PRINT
PRINTERS
CENTRONICS
SERIAL
RS 232
COLOR PRINTERS
COMMODORE MCS
EPSON
SCREENDUMPS
LARGE
SMALL
BANNER
SPECIALS
SPRITES
CHAR SETS
OK
CANCEL
PORT 1
PORT 2
MOUSE
AUTO FIRE

THE FINAL CARTRIDGE III

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Freezer options include:

CENTRONICS/SERIAL/RS 232 SCREENDUMPS
● Full A4 printing ● Variable printsize ● Colour printing ● Sprite printing ● Reverse printing ● Colour changes.

GAMEKILLER
● Kills sprite to sprite ● and/or sprite to background collision ● Can be started at any point in your game.

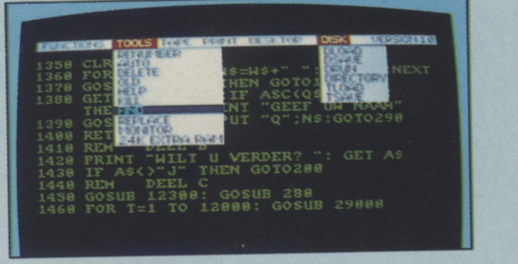
AUTO FIRE
● Transforms a normal joystick to an advanced auto fire engine.

JOYSTICK PORT CHANGER
● Never blow up your computer again by changing joystick ports while the C64 is running.

BACK UPS
● Disk to disk ● Tape to disk ● Disk t
● Back up files are packed and reloada
without the Final Cartridge III ● 60K in
15 sec. (disk) ● Exits to Monitor or Ba

ML MONITOR
Comfortable ML monitor.
Does not reside in memory.
Functions include:
● Scrolling up and down ● 64K ROM/
access ● Sprite editor ● Character edi
● Drive monitor ● Fast loading and sa
● Printer driver.

PULL DOWN MENU


FUNCTIONS TOOLS TAPE PRINT DESKTOP DISK VERSION 1.0
RENUMBER
AUTO
DELETE
OLD
HELP
KILL
FIND
REPLACE
MONITOR
24K EXTRA RAM
DLOAD
DSAVE
DRUN
DIRECTORY
TLOAD
TSAVE

```
1350 CLR      $=W$+" ":      NEXT
1360 FOR      HEN GOTO1
1370 GOS      IF ASC(Q$
1380 GET      NT "GEEF UW NAAM"
     THE      UT "Q";N$:GOTO290
1390 GOS
1400 RET
1410 REM
1420 PRINT "WILT U VERDER? ": GET A$
1430 IF A$<>"J" THEN GOTO200
1440 REM   DEEL C
1450 GOSUB 12300: GOSUB 280
1460 FOR T=1 TO 12000: GOSUB 29000
```

THE FINAL CARTRIDGE III

Almost all commands and functions that are not activated by windows can be selected from a menu bar, which appears on top of the screen after pressing the fire button, either in Basic or from the freezer. The following Basic Toolkit and keyboard extra's are included:

● Renumber ● Auto ● Delete ● Old ● Help ● Kill ● Find ● Replace ● 24K extra RAM for Basic ● Append ● DAppend ● DSave ● DOS ● Moniter ● Drive monitor ● Sprite editing ● Centronics interface ● Fast format ● Low Res screen-dumps ● Plist ● Scrolling up and down ● Stops and continues listings ● Programmed functionkeys ● Packer/Cruncher ● Hex to decimal conversion ● Pokes, syscalls and variables may all have Hexadecimal values ● Trace, Dump, Order, Mem.

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WIN! OUR FABULOUS, GASTRONOMIC TIME AND MAGIK COMPETITION

Mandarin offer you the taste of China – and a little 'Time and Magik!'

Mandarin the new software company that is releasing Level Nine's great new *'Time and Magik'*, wants to offer CCI readers a taste of China. The winner of the *Mandarin/'Time and Magik'* competition will be awarded the prize of an exquistie chinese meal at Kenneth Lo's Taste of China restaurant in London. The chinese meal is for two people up to the value of £100 – *Quite a feast!* Or if you prefer, you can choose to have the same value meal for two at any Chinese restaurant in your own locality.

25 runners-up will get a copy of the great new Level Nine trilogy 'Time and Magik!

To win all you have to do is answer the following:–

1. **How many parts are there in 'Time and Magik'?**
2. **Which ancient figure introduces Lords of Time?**
3. **How many Lords of Time are there?**
4. **What blocks Magik in Red Moon?**
5. **What are guarding the Red Moon Crystal?**
6. **Time and Magik is published by Mandarin – what colour is the box?**
7. **Who is the villain in 'Price of Magik'?**

Answers on a postcard please to: Mandarin/Time and Magik Competition, c/o Commodore Computing International, 40 Bowling Green Lane, London EC1R 0NE *to arrive no later than August 15th 1988*

HORGAN'S HINTS

Horgan's Hints

Before my plea for a poke for IO had even been published, I received just such a poke from Stephen Logie who forgot to include his address on the letter. If he wants his tenner, subscription and T-shirt, for tip of the month, he had better let me know where he hangs out.

C64

These first four cheats come from the very same Mr. Logie.

IO

Thanks to Stephen, frustrated IO players can now zap away with infinite lives. Simply reset and...
POKE 25117,173
SYS 24576

Professional BMX Simulator
Freeze that clock with a swift
POKE 8692,0
SYS 4096

Mission AD
More energy than a bucketful of Dextrosol can be yours with this easy to swallow poke washed down with a quick sys call to get you going again. Reset after loading and enter:
POKE 46774,165
SYS 23154

Garfield
When did that dozy Garfield ever have any energy? Make history with these infinite energy pokes:
POKE 25370,173
POKE 25389,173
SYS 35329

Nadeem Akhtar is responsible for the following couple.

Kung Fu Master
Infinite lives for this rather easy but enjoyable kick 'em in.
Load, reset and type:
POKE 34142,128
SYS 32768

If you didn't already know, a bit of fun can be had by pressing G with shift lock on. On level one, facing left only you will be given a pistol to splat the baddies.

Scooby Doo
Infinite Scoobs are yours with the following poke.
POKE 7450,96
SYS 2560

Once again, Robert Troughton caters for those amongst you without a reset switch with these listings.

Combat School
Run the listing and load the game. You may notice the intentional alteration to the loader. Then again, you may not. Either way this will qualify you automatically, but level eight won't load. Anyway, this should give you enough practice on the harder events for you to get there without the pokes.

```
100 DATA
32,44,247,32,108,245,169,32,14
1,202,2

110 DATA
169,205,141,203,2,169,207,141,
204,2,96

120 DATA
141,255,255,169,32,141,84,3,16
9,224,141

130 DATA
85,3,169,207,141,86,3,96,169,2
38,141

140 DATA
200,8,169,207,141,201,8,238,33
,208,96

150 DATA
169,32,141,41,1,169,0,141,42,1
,169,208

160 DATA
141,43,1,76,126,9,169,242,141,
32,208

170 DATA
169,128,141,95,8,96,0,0,0

180 FOR L=53175 TO 53258:READ
A:POKE L,A

190 NEXT:POKE 157.128:SYS
53175
```

Micro Ball
For infinite lives on this neat little pinball game, run the listing and load the game.

```
100 FOR L=52992 TO 53051:READ
A:POKE L,A:

110 C=C+A:NEXT:IF C=7401 THEN
SYS 52992

120 PRINT "ERROR IN DATA"

130 DATA
169,1,168,170,32,186,255,169

140 DATA
0,32,189,255,32,213,255,169

150 DATA
26,141,212,2,169,207,141,213

160 DATA
2,96,169,39,141,4,198,169

170 DATA
207,141,5,198,76,0,198,169

180 DATA
52,141,23,198,169,207,141,24

190 DATA
198,76,0,29,169,173,141,179

200 DATA 101,76,0,86
```

Freddy Hardest
Here are a couple of listings, one for each part of the game. Both give infinite lives.

Part One:

```
100 DATA
32,44,247,32,108,245,169,32

110 DATA
141,202,2,169,181,141,203,2

120 DATA
169,1,141,204,2,96,141,203,2

130 DATA
255,169,195,141,136,1,169,1

140 DATA
141,137,1,96,169,173,141,23

150 DATA 181,76,9,128

160 FOR L=415 TO 458;READ A

170 POKE L,A:NEXT L:SYS 415
```

The code for part two, as we printed in the February issue is 25425.

Part Two:

```
100 DATA
32,44,247,32,108,245,169,32

110 DATA
141,202,2,169,181,141,203,2

120 DATA
169,1,141,204,2,96,141,255

130 DATA

255,169,195,141,136,1,169,1

140 DATA
141,137,1,96,169,173,141,134

150 DATA 153,76,9,128

160 FOR L=415 TO 458:READ A

170 POKE L,A:NEXT L:SYS 415
```

Bas Zecha from Noordwijk in The Netherlands has some cheats for a twosome of Elite games.

Thundercats
After loading, reset the 64 and enter the following for infinite lives:
POKE 35088,173
SYS 2061

Buggy Boy
Reset on the track selection screen and enter:
POKE 4768,133
POKE 4769,20
POKE 39927,96
POKE 2048,32
POKE 2049,104
POKE 2050,13
SYS 2560

A Gale brought these poke my way (that's the name of the sender, not a gust of wind!).

Tiger Mission
Hold down these keys for a few seconds: CTRL, Commodore, 2,Q,R,L,I,K.

Feud
Reset after loading and enter:
POKE 16404,15 to start the game with all the ingredients
POKE 17204,15 for invincibility
POKE 17591,1-40 to move around at a different speed (1=slow, 40=fast)
SYS 16384

James Haymer has very kindly sent me this bunch of no-poke cheats.

Jack The Nipper
Type **ZAPIT** to enter the cheat mode.

Zaxxon
Type **RED** for invincibility.

Nebulus
For infinite time and lives, hold down ↑ followed by J, followed by ← on the title screen. Pressing 1-8 will also send you to the corresponding level.

Booty
Pressing ← when playing the game takes you through each screen.

Frak!
Type **AMERICAN EXPRESS** on the high score table.

Firetrack
As you start the game, ← hold 9,spacebar.

Miner 2049er
Hold down fire for about ten seconds to advance a level.

Anarchy
Simply type **CHEAT** on the high score table.

Circus Circus
To advance a level, press CTRL, RUN/STOP, SHIFT and COMMODORE.

C16
Roy Robinson keeps up the interest in the C16 with these pokes. Use them all by loading the game, resetting and entering the pokes.

Formula One Simulator
POKE 13105,16 takes away the computer controlled cars and gives infinite time
POKE 13108,16 gives infinite time
POKE 13112,54 gives extra time
SYS 14988 starts the game

Xargon Wars
POKE 9962,0 allows you to keep on firing when the temperature gets too hot
POKE 10003,0 alien bombs go through your ship when you are still
POKE 12222,0 stops aliens dropping bombs
SYS 7296

Prospector Pete
POKE 6280,0 for infinite lives
POKE 6541,0 stops water and nasties chasing you
POKE 7500,0 makes dynamite at the bottom of the screen non-explosive
FOR I=7881 TO 7896:POKE I,255:NEXT I gives 255 sticks of dynamite on each screen **SYS 6144** restarts

Blagger
POKE 11086,0 stops the spiky plants killing you.
POKE 13066,255 gives 255 lives
SYS 9242

U.X.B.
POKE 9586,255 gives 255 lives
SYS 6500

Blaze
SYS 8792 starts you on the last level

Out On A Limb
POKE 6956,255 allows you to walk through nasties
POKE 7572,255 allows you to walk through plants

Xadium
POKE 7554,0 for infinite time
SYS 5381

Supergran
POKE 5203,234 allows you to ride through Chisilton Town
POKE 5222,234 for infinite lives on screen one
POKE 5023,255 takes you onto screen two
SYS 4950

Oh dear, we seem to have come to the end of this month's hints. I'm currently putting together a map of Psygnosis' Obliterator, so stay tuned for that. All tips etc, for any Commodore will be much appreciated. Send them to:

Tony Horgan

Horgan's Hints
40 Bowling Green Lane
London
EC1R ONE
Tony Horgan

★ Program Submission Procedure ★

DO NOT submit any program or routine that you do not either own or have property authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.

Do not forget to make it clear exactly which computer/s your program or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Number all pages.

Never use staples. Use paperclips if necessary.
If you are saving your program to tape then save it AT LEAST twice on each side.
When you save a program on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the program. Label tape or disk with your name and the name or title of the program.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programs have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your program to be returned.

★ Programming tips ★

If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your program on completion a many readers use auto number utilities to ease typing in.

Try to keep instructions within the program itself at a sensible level. You can expand on them within the accompany text if necessary.

TEST your programs before submitting them or even better get a friend to test them for you.

If a program contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your program contains more than five lines of data.

STOP PRESS

HORGAN PLAYS AROUND WITH VIXEN!

Even Page Three Girl, Corrine Russell, is unable to resist the magnetism of Tony Horgan, famous for his Hints. (And no jokes about his pokes!) At a joint launch for Martech's hot new Vixen game and Tony's 18th Birthday party, the two happy stars got close together to discuss technical game points. Apparently the lovely topless model Corinne heard Tony was coming in his birthday suit, but she was disappointed when she found it was made of grey flannel. Tony says he thinks Corinne would make a good partner for any two player mode, especially Martech's Vixen in which she not only stars but influenced the design of the design of the leading character. Tony believes Vixen could turn out to be his favourite game. Not surprising . . . Pity about the suit though, he looks better in a Tee shirt, though Corinne didn't really seem to mind.

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GAMMA STRIKE

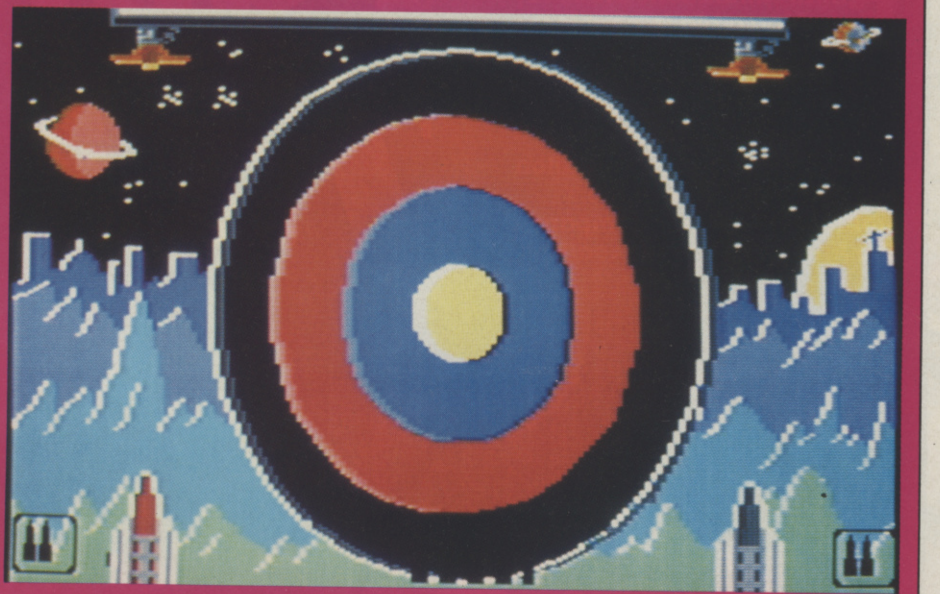
Gamesware

If you fancy a change from the usual kind of computer game, Gamma Strike from Gamesware could be just what you are looking for, instead of just sitting in front of a screen twiddling a joystick, it gives you the chance to get real action.

The Gamma Strike package consists of a cassette with three games, a generous amount of pellets, two guns, a spare overlay and a target. A two metre cable connects the target to the user port of your 64/as/28. All three games involve shooting the guns at the target, the effects of the hits varying with the game.

Competition Shoot-out is the first exercise in firepower. This is a very simple shoot-out in which the computer merely generates the sound effects and the scoreboard. There are few graphics to speak of, just a screenful of numbers.

> *"A set number of aliens need to be shot before you meet up with the big baddie. Once that is done, you see the big alien ready to draw his gun."*



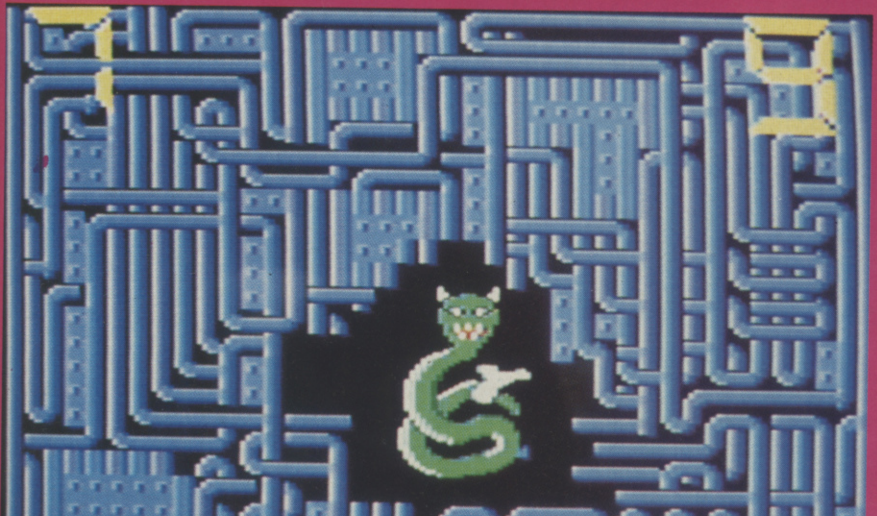
There is something considerably more of interest in the second game, Voyager 19. Two ships either side of a large target race to the screen. The more accurate the players' shots are, the faster the ships go. The announcements of the winner are spoken but the quality of the speech is hardly terrific. This is a lot more attractive than the first game due to its highly colourful, if a shade blocky graphics.

A simple joystick controlled shoot 'em up opens the third game. Here, a set number of aliens need to be shot before you meet up with the big baddie. Once that is done, you see the big alien ready to draw his gun. As soon as you see him, you have to shoot the target to kill him first.

None of the games is any great feat in programming, but they are enough to give a very agreeable change from the usual straight shoot-out. The gun design could be better; if they are held in the awkward manner sugested in the instructions, they should serve you well, but are easily broken when held any other way. Weak guns aside, the whole thing can be good fun. I suppose this is aimed more at the younger end of the games market, for whom the guns would not be a problem and who would get more out of the package.

Gamesware should be congratulated for trying something different. The price may be a little high considering but it is really a novelty, and it certainly does contain a fair bit of equipment. There is no doubt the younger gamers will enjoy hours of Gamma Striking fun.

T.H.

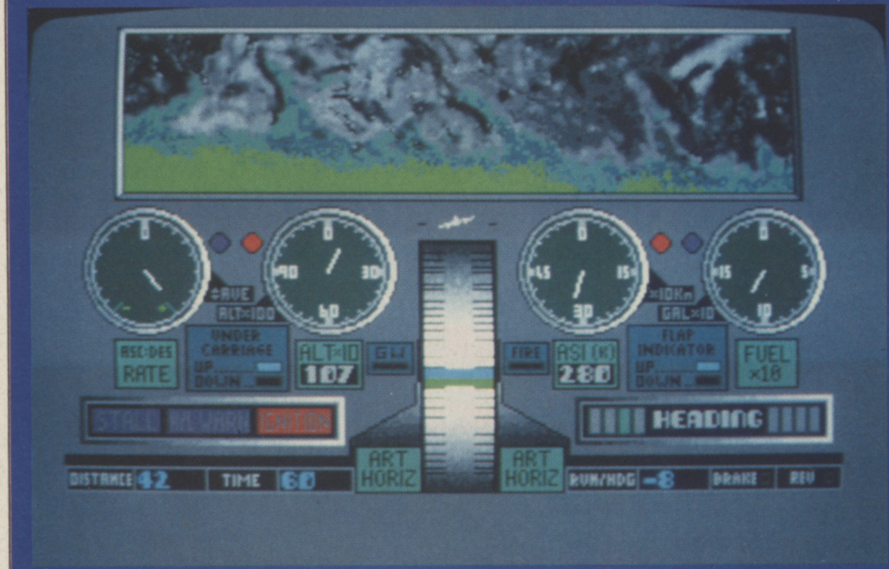


Price: £19.95
Contact: Gamesware
59-61 Church Street
Liverpool
L1 1DE

Flight Path 737

Anco

Flight simulations are really making a big impact at the moment, possibly the shoot 'em up audience is beginning to grow up and want something more challenging. Anco have already made one contribution with Jump Jet. One of the problems of being a company like Anco is how much realism to put in and how much action is needed.



For a change, set in modern times with not a hint of war, 737 challenges you to take off, fly over a mountain range, cruise for a while and touch down softly at your destination. Something that annoys me about most flight sims is the way that setting-up is always the same: just a routine of key presses, or in this case mouse button clicks. With that out of the way you can start taxiing along the runway.

A combination of mouse and button presses get your speed up and keep you on the runway. The runway which extends around twenty feet ahead of you before abruptly ending, jerks slowly towards you. At the optimum moment you must pull up from the ground, remembering to take up the undercarriage and flaps.

With stage one successfully completed you keep the speed up whilst climbing steeply to avoid the mountain range ahead. Climb too steeply with speed and as in real life, you will stall, so both pitch and speed must be correctly balanced. With any luck and skill the smoothly shaded mountains will sink beneath you as move out into open airspace.

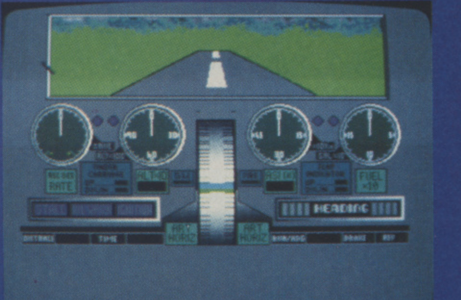
> *'With any luck and skill the smoothly shaded mountains will sink beneath you as you move out into open airspace.'*

Here you need to keep on course and watch for air turbulance and engine fires.

Approaching the runway requires more careful control before you into the landing procedure. A final procedure of flap setting and speed reduction gets you down on the tarmac.

Insted of the usual joystick and keyboard control, the 737 is flown solely with the mouse. Half of the functions are the standard cursor and icons, but where I found it difficult is in its lack of response in accelerating, banking and climbing. I would have much preferred to use a joystick than constantly pushing the mouse around. A very realistic engine sound drones away, but little else can be heard.

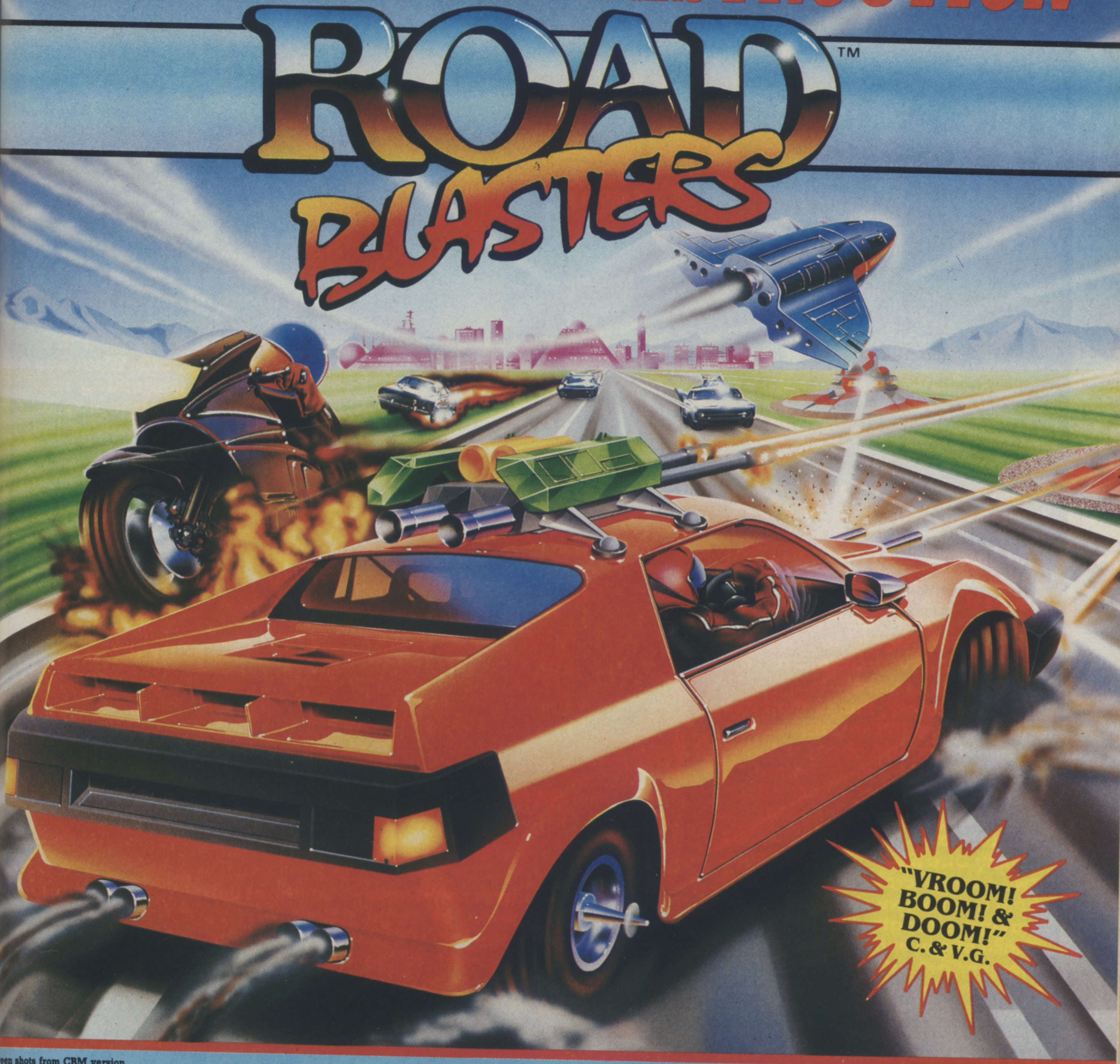
It is possible that after a short while, flying the plane could become very much a routine affair. But, of course, that is the same with real flying. The same tasks have to be carried out every time with very little freedom to improvise. Some people live flight simulations that rely on realism, recreating the assumed thrills of flight, not simply learning a pattern of "flaps up, accelerate to 170km, undercarriage up..." However, there is a substantial number of players who will appreciate the not too demanding approach the 737 takes. For £9.95, it is worth checking out.



B.V.

Graphics: 60%
Sound: 37%
Playability: 58%
Value: 66%
Price: £9.95

SUPERCHARGED DESTRUCTION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GARRISON II

Rainbow Arts

Graphics: 7
Sound: 8
Playability: 6
Value: 4
Price: £24.99

When a sequel to a popular game is released, the people most likely to buy it are those who bought and enjoyed the original. In that case, the sequel should include the best bits of the original and improve and develop other areas. Who wants to fork out another £24.99 for a game almost identical to the first?

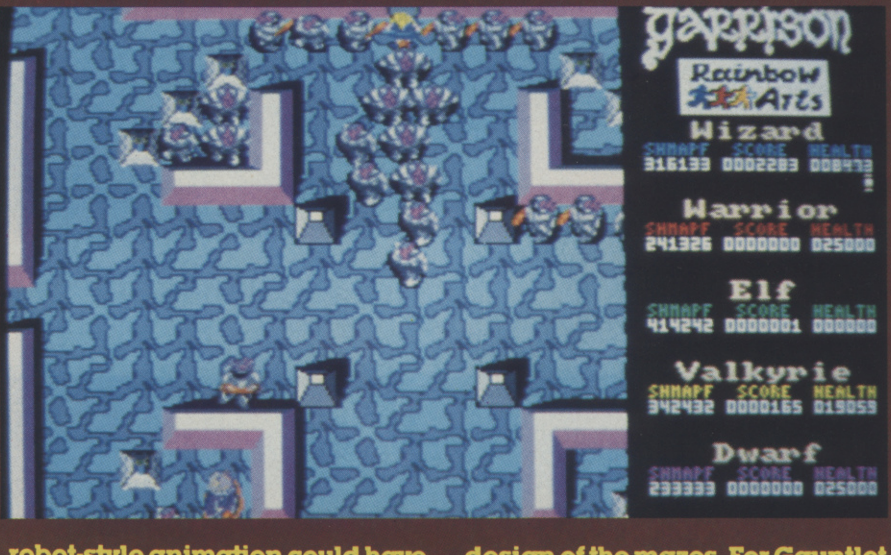
Unfortunately, this is the case with Garrison II. The game comes on two disks and opens with the same title screen as before (it still says Garrison, not Garrison II), followed by a picture of the warriors and that same slightly off-key Dire Straights guitar solo. Two people can choose to play from a list of five characters with varying strengths, speeds etc.. Those of you with 1 megabyte of memory get different sprites for each character, but with 512K they all look the same, even their colour. It does seem strange that the programmers could not find room for a few sprites in half a megabyte!

The object of the game is to fight your way through 128 levels of maze-like dungeons full of monsters, keys, potions and treasure. In other words: Gauntlet. When Gauntlet was new it made a great multi-player game. However, after the bombardment of Gauntlet clones and variants we have had in the last couple of years, its appeal is fading, although it is true not that many have yet appeared on the Amiga.

Graphically, I could see no difference between Garrison I and II. I would have thought the robot-style animation could have been improved upon, as could the grossly over-weight Merlin the Wizard. All the rest of the ghosts, grunts, lobbers and so on are reasonably well-drawn. Some of the sound effects are pretty good, but again they are no different from before.

In some levels, the amount of baddies attacking you gives the screen a very busy look but they are often so abundant that you find yourself hacking through at a yawn-inducing pace. What Garrison II lacks is something new and exciting in the gameplay. As it is, the only difference is the design of the mazes. For Gauntlet fans without a home-computer version, Garrison II should be taken into consideration. Anyone who has enjoyed Garrison I will obviously be interested, but £24.99 is very pricey for a new set of mazes.

T.H


garrison
Rainbow Arts
Wizard
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Warrior
SHNAPF SCORE HEALTH
241326 0000000 025000
Elf
SHNAPF SCORE HEALTH
414242 0000001 000000
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Dwarf
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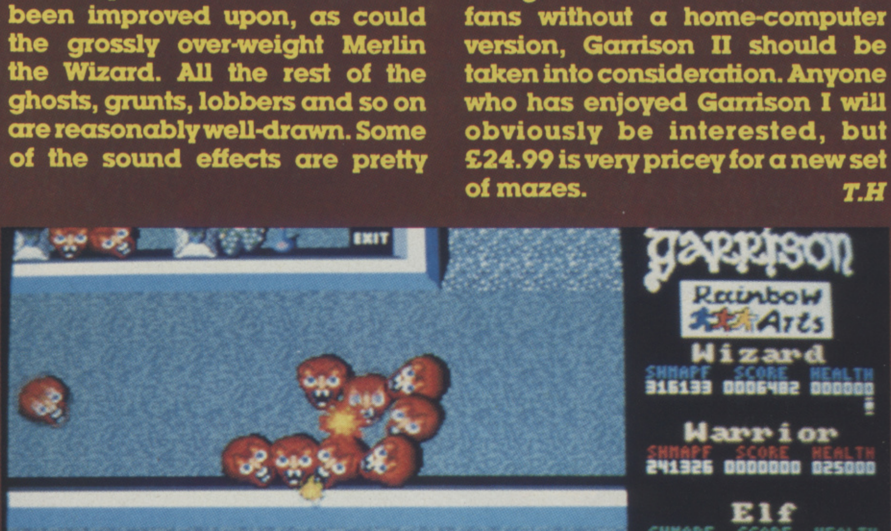
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garrison
Rainbow Arts
Wizard
SHNAPF SCORE HEALTH
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Warrior
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Elf
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414242 0000001 000000
Valkyrie
SHNAPF SCORE HEALTH
342432 0000165 000000
Dwarf
SHNAPF SCORE HEALTH
233333 0001050 022540

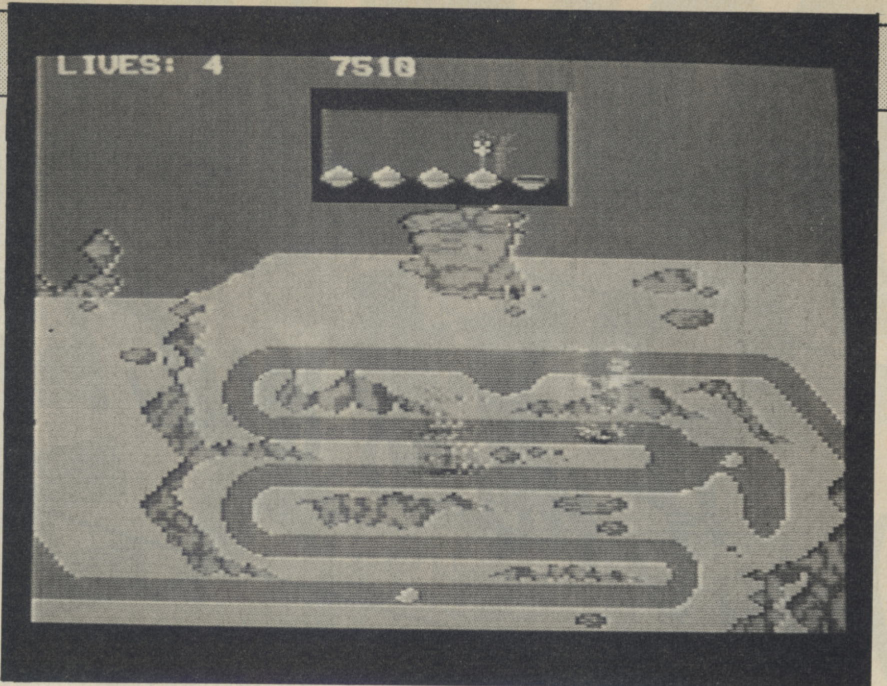
Arcade Force Four

US Gold

Following their recent Arcade Alley, US Gold have bundled another four coin-op conversions into Arcade Force Four.

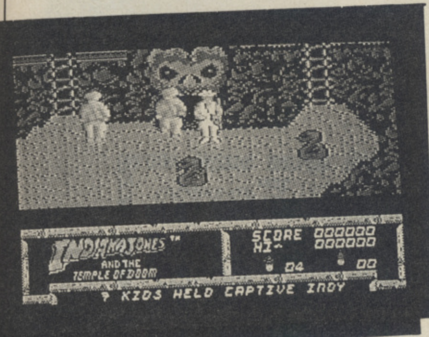
Gauntlet (The Deeper Dungeons) is the original two player D & D maze game. The difference here is that the levels have been re-designed from those of the original. Apart from that, the game is identical to the first in the series. One or two players battle through 128 dungeons full of ghosts and ghoulies.

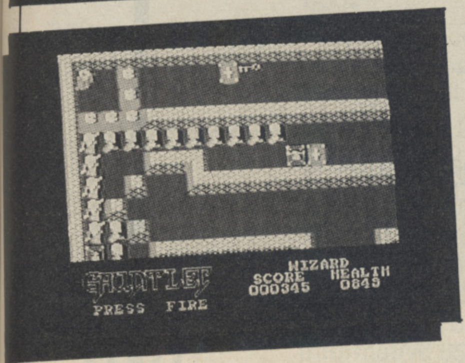
Each player can take the part of one of four characters. As you might expect, all have different degrees of armour, shot power, hand to hand combat and magic power. In the large scrolling mazes, ghosts, grunts, demons, lobbers, sorcerers and death pile out of generators, crowding and ultimately overwhelming the players. Potions and food can be collected to top up your energy and cast monster-killing spells.



Gauntlet's graphics and sound are no more (or less) impressive than Gauntlet I – which did not seem a vital factor in making it the most popular game of its time. Certainly, when played with a friend, the game can be a lot of fun.

Metrocross is another of those future sports. There are 24 horizontally scrolling courses to be raced over. Hurdles and coloured squares need to be jumped over, springboards send you spinning through the air and skateboards give you a boost. Later levels introduce more obstacles and bonus items.





It is pretty easy to play through the first few levels, making it instantly enjoyable, but then again, all the levels are very similar to each other. Neither graphics nor sound are outstanding. Your character is a very blocky chap, matching the rest of the sprites and scenery. Fun for short periods but low in the lastability stakes.

Road Runner manages to recreate the same humour that makes the cartoon popular. You get to play Road Runner, always on the run from Wile E Coyote. Scrolling from left to right, the idea is just to avoid Wile E by legging it along as many roads as possible. Regular portions of seed need to be gobbled to stop Road Runner passing out from exhaustion.

True to the cartoon, Wile E is equipped with a number of contraptions to get hold of Road Runner. A rocket-powered skateboard, magnetic bird seed, giant rockets and a jet pack make Wile E a tricky character to deal with. Jolly jingles and well drawn sprites combine with the humour to make Road Runner my favourite of the compilation.

Indiana Jones and the Temple of Doom was a bit of a weak game in the first place, which is the main reason that the 64 version creates little excitement. Three stages load separately and take you through three scenes from the film. Starting on a cliff face, imprisoned children can be freed with a crack of the whip for bonus points as you make your way up to the mine shaft at the top. Leaping into a cart you steer yourself down the shaft whipping baddies all the way to stage three. Here you attempt to grab the Sankara stone from a bridge across a flaming lava pit.

Graphically dodgy, the game has nothing special to hold the player's interest. Add to this the multi-load and its appeal is even shorter lived.

Arcade Force Four is not the largest compilation around but the inclusion of Gauntlet and Road Runner make it very worthwhile. Both are virtually of classic status and should be in any keen game player's collection.

T.H.

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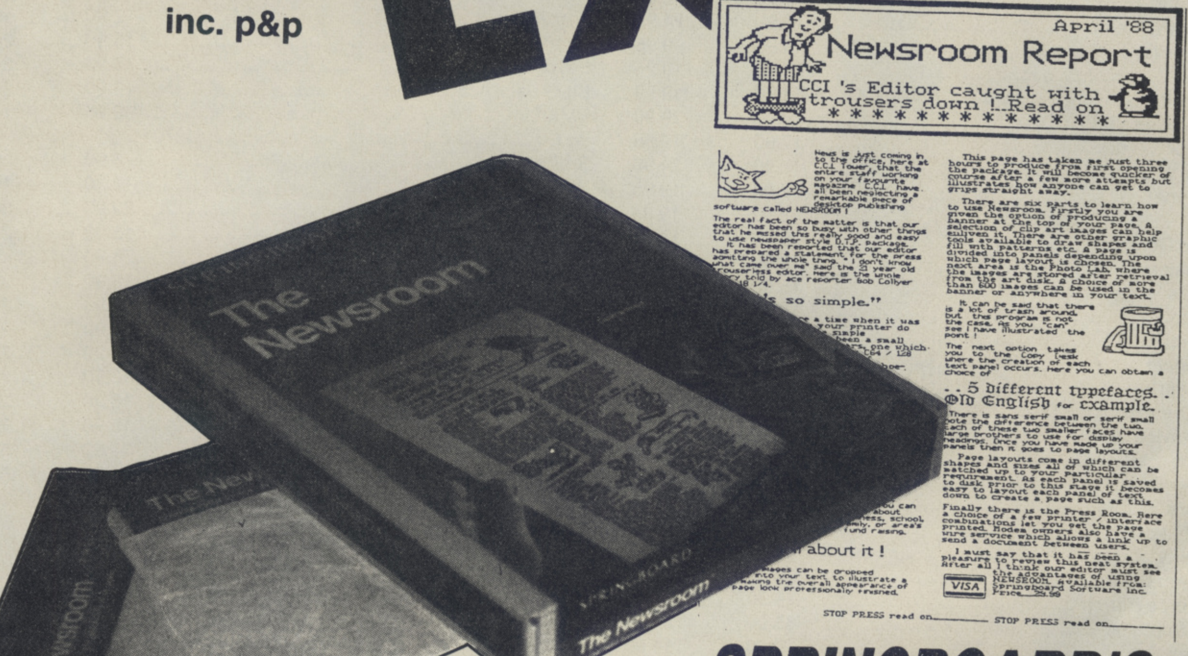

April '88

Newsroom Report

CCI 's Editor caught with trousers down !..Read on

* * * * * * * * * * * * *

News is just coming in to the office, here at C.C.I. Tower, that the entire staff working on your favourite magazine C.C.I. have all been neglecting a remarkable piece of desktop publishing software called NEWSROOM !

The real fact of the matter is that our editor has been so busy with other things that he missed this really good and easy to use newspaper style D.T.P. package.

It has been reported that our editor has prepared a statement for the press admitting the whole thing. " I don't know what came over me" said the 21 year old trouserless editor. Here is the whole story told by ace reporter Bob Collyer 18 1/4.

's so simple."

e a time when it was your printer do simple been a small rs. one which C64 / 128 boe.

ou can about ness, school mily, or area's fund raising.

about it !

ages can be dropped into your text to illustrate a making the overall appearance of page look professionally finished.

This page has taken me just three hours to produce from first opening the package. It will become quicker of course after a few more attempts but illustrates how anyone can get to grips straight away.

There are six parts to learn how to use Newsroom. Firstly you are given the option of producing a banner at the top of your page. A selection of clip art images can help enliven it. There are other graphic tools available to draw shapes and fill with patterns etc. A page is divided into panels depending upon which page layout is chosen. The next area is the Photo Lab, where the images are stored after retrieval from the art disk. A choice of more than 600 images can be used in the banner or anywhere in your text.

It can be said that there is a lot of trash around, but this program is not the case. As you "can" see I have illustrated the point !

The next option takes you to the Copy Desk where the creation of each text panel occurs. Here you can obtain a choice of

. . 5 different typefaces. .
Old English for example.

There is sans serif small or serif small note the difference between the two. Each of these two smaller faces have large brothers to use for display headings. Once you have made up your panels then it goes to page layouts.

Page layouts come in different shapes and sizes all of which can be matched up to your particular requirement. As each panel is saved to disk prior to this stage it becomes easy to layout each panel of text down to create a page such as this.

Finally there is the Press Room. Here a choice of a few printer / interface combinations let you get the page printed. Modem owners also have a wire service which allows a link up to send a document between users.

I must say that it has been a pleasure to review this neat system. After all I think our editor must see the advantages of using NEWSROOM. Available from: Springboard Software Inc. Price 29.99

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C64

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NORTH STAR

Gremlin

Another game scenario paints a gloomy (but who knows, maybe realistic) picture of the future: in the year 2499 the over-populated earth is running short on food, so the Earth Lords have built a space station designed for speedy production of nutritious food. Just when everyone thought the world was saved, an alien race invaded the station and shut down the life support systems, killing everyone on board.

Why they could not send an army or something to sort them out I do not know, but they chose to send you on a lone mission to win back the station and save the world (you can do it, can't you!). You do have the advantage of a robot arm which can be extended a short length to biff the baddies. A few more robotic implants give you the ability to jump over twice your own height.

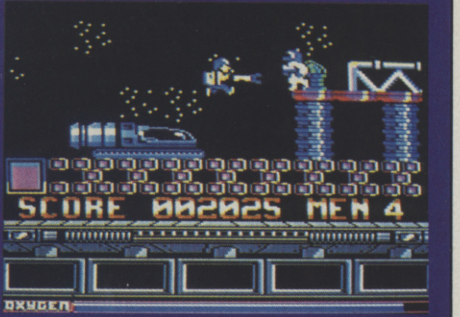
In a very similar style to Venom Strikes Back, North Star is played over horizontally scrolling levels of platforms and chasms. Those aliens that invaded the station swarm all over the place, electrocuting any Earth savers on contact. Permanently holding down the button keeps your arm pumping out in front of you, leaving you to worry about jumping around the platforms. One of the biggest problems is not running straight into the aliens. Due to the high speed of the scrolling and aliens, death occurs very frequently. The fact that the aliens kill you when you are standing on a platform above them adds to the difficulty.

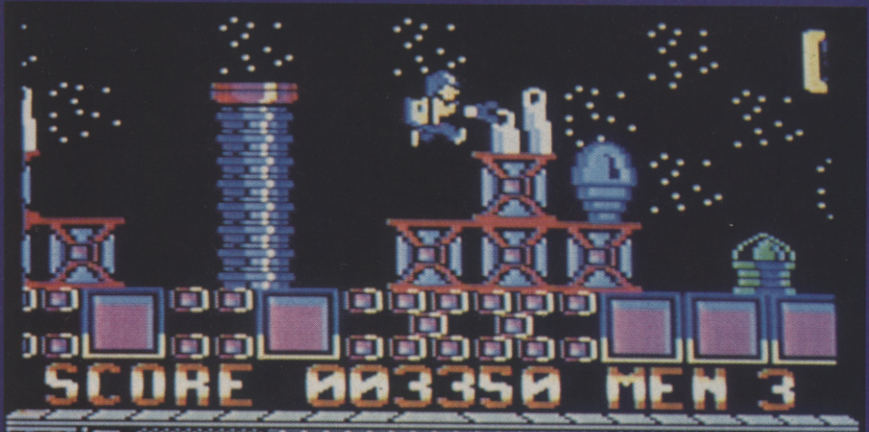
> *'If you enjoyed Venom then North Star will be worth a look for more of the same with a bit more polish'*

What game these days would be complete without additional weaponry? North Star does not fail in that respect. There are five to collect along the way. While the graphics are very colourful and neat, the music and sound effects are very forgettable while North Star reminds me a lot of Gremlin's recent Venom Strikes Back. It is a lot easier on the eyes, the graphics are far more tastefully coloured. There is also a noticeable similarity in gameplay.

Running along, jumping over platforms and bouncing off aliens has not varied. If you enjoyed Venom then North Star will be worth a look for more of the same with a bit more polish. The trouble is that there is just nothing terribly new or particularly entertaining about the game. No decent explosions, sound effects, large characters or anything out of the ordinary. It is a pity for it is clear that the ideas are there but the imagination to create something out of the ordinary has not been set free.

B.V.





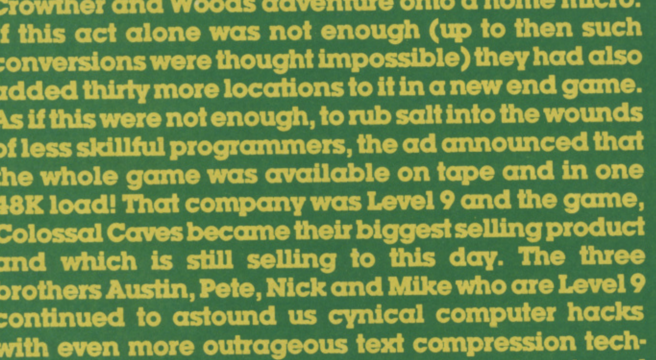
Graphics: 78%
Sound: 42%
Playability: 55%
Overall: 52%
Rating: IFFY
Price: £9.99 (c)
£14.99 (d)

TIME AN

A trilogy of adventures from Level Nine means Andy Moss is hot on their trail. Amiga Time and Magik has arrived.

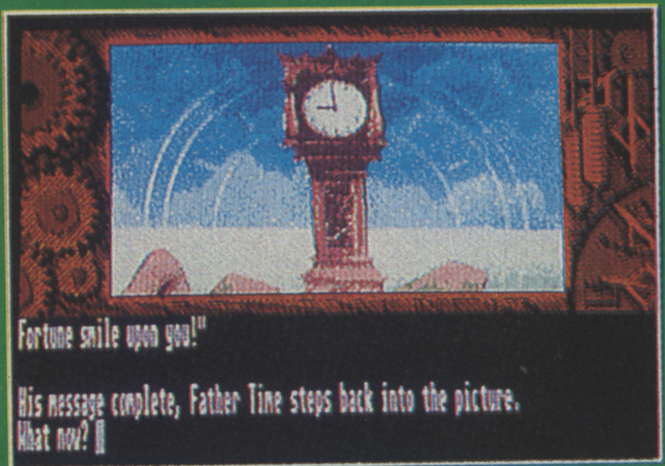
I first came across the name Level Nine back in 1982 when home computing games were very much in their infancy. I was reading a certain weekly computer magazine, and came across an advert from a company claiming to have reproduced, in its entirity, the original classic mainframe Crowther and Woods adventure onto a home micro. If this act alone was not enough (up to then such conversions were thought impossible) they had also added thirty more locations to it in a new end game. As if this were not enough, to rub salt into the wounds of less skillful programmers, the ad announced that the whole game was available on tape and in one 48K load! That company was Level 9 and the game, Colossal Caves became their biggest selling product and which is still selling to this day. The three brothers Austin, Pete, Nick and Mike who are Level 9 continued to astound us cynical computer hacks with even more outrageous text compression techniques with releases like Adventure Quest and Dungeon Adventure (still my favourite), which seemingly pushed back the boundaries of memory more and more.

By now their place in British computer-lore was well and truly written, and the brothers with work Piling in faster than they could cope accepted two ready made adventure stories from a couple of fans. Sue Gazzard wrote The Lords of Time and David Williamson penned Red Moon. Using their by now tried and trusted ACODE writing system they wasted no time in bringing out the games on all formats. Red Moon signaled a more magic based period for the company, with Pete himself writing The Prince of Magik as a sort of sequel to Moon.


You are in a ruined stone house, scarcely more than a heap of rubble, though a deep alcove survives in the remains of one overgrown wall. This house seems an ideal place to cache your loot. You can see an axe and a lamp.
What now?

All this was of course B.M.A. (before mighty Amiga) and 16 bit was just a pipe dream, but in true pioneering fashion the Austins were already up-dating their system to accomodate new technology, and bring in graphics to their games.

To begin with they used a simple style of illustration almost as though using the graphics in their adventures was a necessary evil that had to be there because of commercial pressure. This was, of course, true. As more and more adventure publishers decided that text only games would only appeal to the minority and that to get adventures selling they needed to be more "colourful". Level 9's attempts at graphics brought derision from their critics and competitors, so it was back to the drawing board to find another style.


Fortune smile upon you!"

His message complete, Father Time steps back into the picture.
What now?

> ***"The plot has been cleverly moulded into one concept which details the struggles of the Guardians to Protect Time and Magik, in three different episodes, hence the three adventures"***

This new style coincided with the Austins signing up with Rainbird which really brought big business into their up-to-then cottage industry lives. The graphics resembled a type of Pastel style water-

ND MAGIK

colour effect, again totally different from the standard styles we had all been used to. After a series of releases through Rainbird followed by a series of mishaps, the Austins moved to newly formed Mandarin to Publish their reworked trilogy of games into the all-in-one package, Time and Magik. There is no doubting the effort that has gone into rewriting and coding this release and the three adventures benefit enormously from the new interior design. The plot has been cleverly moulded into one concept which details the struggles of the Guardians to protect Time and Magik, in three different episodes, hence the three adventures.

For the uninitiated, Lords of Time has you as the hero trying to stop the evil Time Lords from changing the history of the World. You have to visit nine (surprise!) time zones and collect the nine ingredients of life, like an olive branch for friendship or a jesters cap for laughter. All the objects have to be thrown into the cauldron the Lords are guarding to put the world to rights.

Red Moon is all about the Red Moon crystal which was the only remaining source of Magik Power. Unfortunately it was lost, and the Guardians have selected you as their lone adventurer to find it.

Finally the price of Magik, has you up against the dreaded magician Mylgar a former Guardian who has gone mad courtesy of the Moon Crystal, and is using the crystal for his no good ends. Only by defeating him and recovering the crystal can you take his place as one of the Guardians.

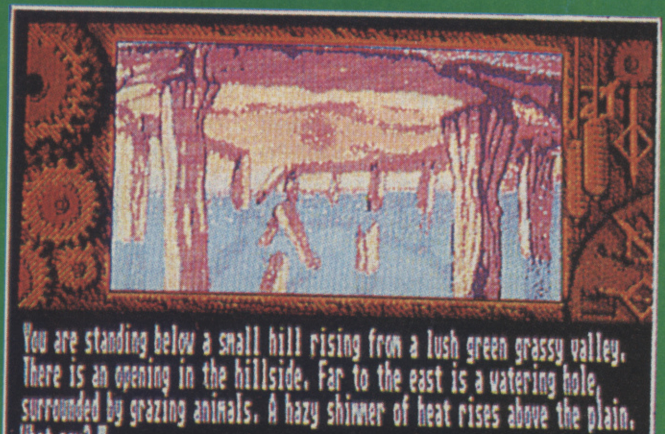
> ***"Be careful though as each time you cast a spell your magik points are used up, even saving the game is a spell!"***

All the adventures are cracking good yarns, with spells to cast and map making essential (these games do not have the GOTO command as available on say Gnome Ranger). Be careful though as each time you cast a spell your Magik points are used up, even saving the game is a spell!

My favourite remains Lords of Time, as the nine different mini-adventures are each unique, yet are combined by objects found in one time needed in another. Look out for the wholly jumper and the Black Knight. There are digitised graphics for each location and whilst not as detailed as Magnetic Scrolls' Amiga graphics, they are of, as I have mentioned, that Pastel effect which is very original. Time and Magik is a wonderful package for the Amiga user who does not own all three adventures separately, and along with the novella contained in the box, is truly great value for money.

Miss out on this trilogy and you miss out on a bit of history in the making. Highly recommended.

A.M.



```
You are standing below a small hill rising from a lush green grassy valley.
There is an opening in the hillside. Far to the east is a watering hole,
surrounded by grazing animals. A hazy shimmer of heat rises above the plain.
What now? █
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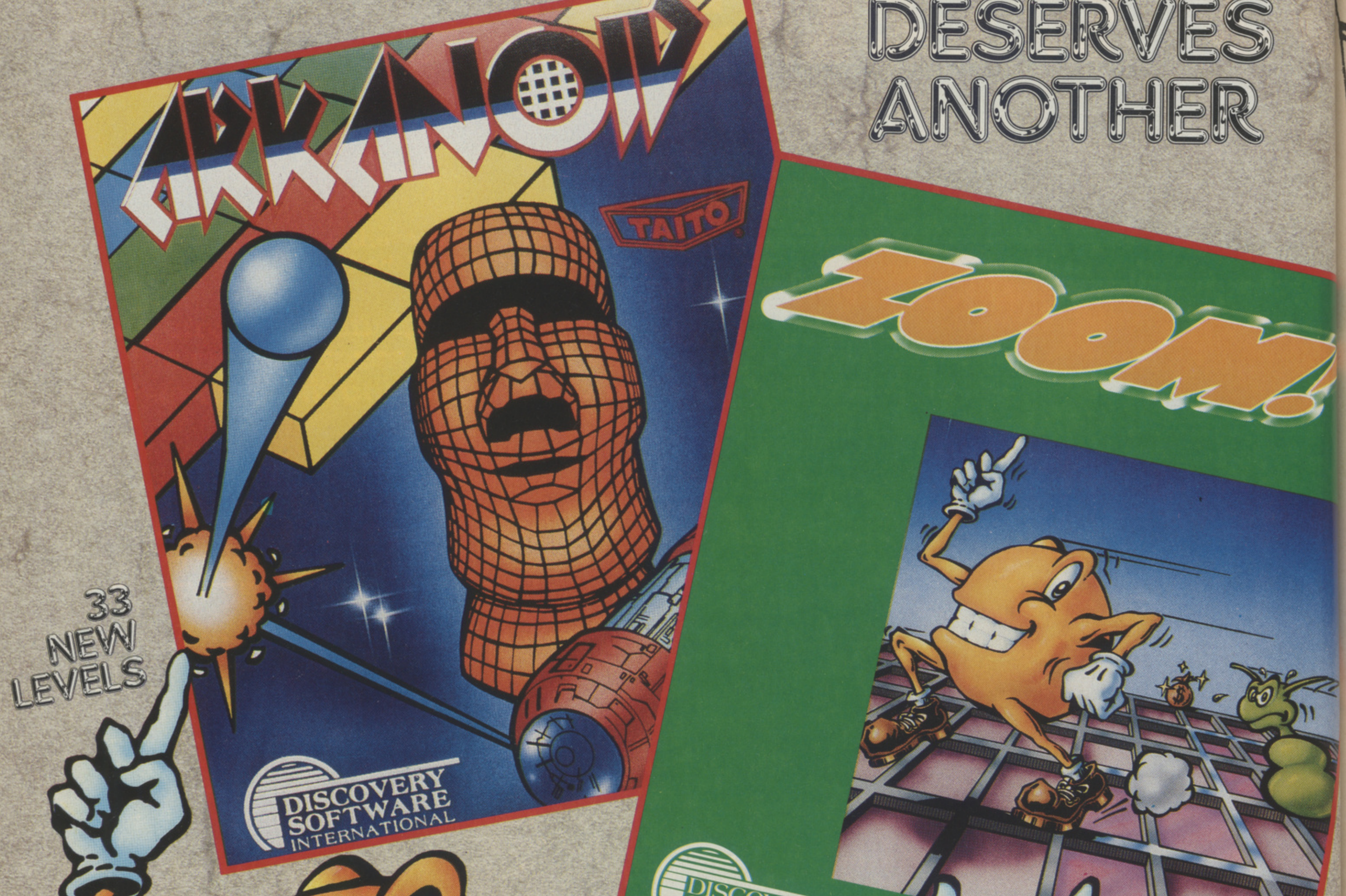
ONE GREAT GAME DESERVES ANOTHER



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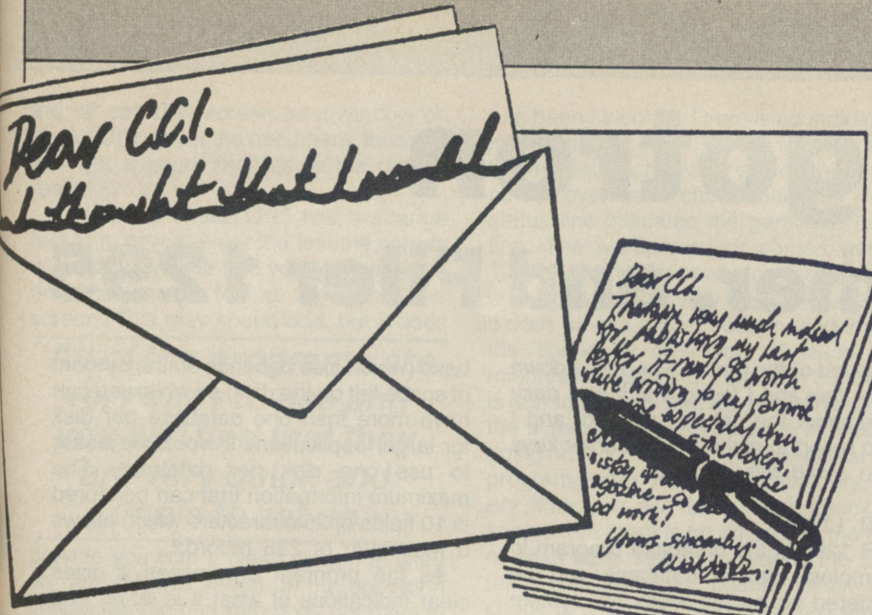

Dear CCI

Hi Everyone!!! I wanna, complain!!! Else I wouldn't have written this, would I?? Oh yes, I would!! Because first I am going to congratulate you. I have tried out C+VG, Zzap! CU and the others, and I have to give it to you CCI is the best mag of them all!!! Now, I want to complain too, as I said, so lets start with your reviews.

The hardware – and tools reviews are fab, brill, astonishing (and all the other words, that I have learned by reading English computer mags). But your games reviews. . . Well, they aren't bad, but the scoring system seems to need a LOT of polishing. Why don't you just copy CU's excellent system, with 0 to 10 score. The 0 to 10 ratings shows it all much clearer than any percentage rating could ever accomplish.

And you could do without the type-ins. Nobody's typing them in anyway. A larger Classified section would be welcome, as I have sent in *5* classified ads, and *none* of them have been printed. (No, they were *not* perverse!) I've enclosed a classified ad in this letter, just to try *yet* again.

Now to something completely different. I am not much of a shoot'em up, freak really, I *hate* shoot'em ups (the only one that I have really enjoyed was Delta by Thalamus). No, war games and role playing games are more like it!! (and everyone I have spoken to thinks the same). I just can't see the fun in zapping aliens and commies till the thumb wears out. So, are you listening software-houses, more good wargames wanted!!!

At the end I just wanna say hello to all my computer-friends throughout the world, and hello to the CCI staff, except Jeff Minter (he's a shoot'em up freak) and well your mag's the BEST, despite some of the few flaws. Keep on writing about the Amiga (as I am both a C64 and an Amiga owner).

Over and out from Norway.

Greetings from Geir Pettersen

P.S. I won't win any bets if you print this letter, but, I beg you, can you PLEASE print it anyway (PLEASE???) I am faithfully waiting.

P.P.S. Hope you can distribute the classified ad to where it belongs (in the Classified section, OFFF COURSE!!!)

P.P.P.S. Greeting to anybody, anywhere (I'm a very friendly person!!!)

Dear Geir !

(Exclamation marks seem a favourite of yours, so we thought we'd start our answer with one! Or Two!!(You are entitled to your opinion but we think that our recently changed games scoring – a percentage based system – is more accurate than a simple one to ten scoring. It gives us the chance to differentiate in value between, say, 61% and 69%, which would not be so exact if it were 6 or 7. And CCI readers are very intelligent and want to know absolutely accurately the scoring level of a game. As for "Type-ins", we agree with you that not everybody wants them but we do know too that some people still look for them and key them in. How? Well, when – very, very rarely, of course! we make a tiny error somewhere, we get loads of calls from irate readers pointing it out to us. (We sometimes get irate readers pointing out non-existent errors too! We try to answer patiently. Generally commenting that if just one reader is having trouble out of possibly hundreds or even thousands who are typing the program in successfully, then the probability is that the odd man out and not the program is at fault. Not everybody will acept that deduction though!) As time goes on, we believe, fewer and fewer people will be willing to spend hours finger-fumbling through the keys when they can get a disk drive do the walking and working for them – especially as the 16 bit machines, already equipped with drives, take over. As for your comment about the classified, we have increased the space available this issue,not only for you but for all those who have asked for it and we guarantee that, if not in this issue but in a very closely forth-coming one, you will see your own ad appear. And yes, zapping aliens is not the big attraction it used to be for all gameplayers. Wargames – and other brainstretchers – are gaining popularity among CCI readers and we are sure that software companies are taking notice of the trend – as they always do when they can make some money out of it!

P.S. You certainly sound like a friendly person!

P.P.S. You get the prize for the Letter of the Month!!!

Dear CCI

On reading the article about CP/M in CCI-June advising CBM128 readers about a CP/M kit and User's Guide, I decided to write to you about the recent communication with CBM Business Machines (UK) Ltd.

I bought a second-hand CBM128 recently, (I still own a CBM64). As you know it comes with a CP/M System Disk which has some utilities on the second side. On reading the '128 System Guide' which is also supplied with the computer, I was able to get enough information to copy the System Disk and to access it. From this I became interested in using the CP/M Mode.

With the '128' there was some paperwork concerned with registering as a user also advertising additional CP/M Documentation. This consisted of Digital Research's complete CP/M Plus-Version 3.0 User's Manual, which consists of 3 parts in one: User's Guide – Programme Guide – System Guide. Also there are two Disks. This paperwork had the old Corby address on it. I obtained CBM's new address and phone no. I rang and enquiried if the manual and disks were still available at £24.95p. The reply was yes. I sent a cheque for the above amount and received the Manual and Disks *Two* days later. Very good service. I think CCI is very enjoyable reading, keep up the good work.

Yours faithfully,

E. C. Dawes

Dear E.C. Dawes,

Well, it's great to hear someone say nice things about Commodore. At last they are getting their act together. (Many would growl no doubt, "About time too!" and other cry "Better late than never!") There is certainly a new feeling about and you can see confidence bubbling up in the Commodore world. There is nothing like success to make you feel good – or is it that lovely round figure of One Billion – dollars of business – that CBM will make this year that is bringing those smiles to Commodore faces? Anyway, thanks for letting us hear the compliments as well as the brickbats about Commodore. (Are you any relation to my

continued on page 126

Logotron

Writer, Planner, and Filer 1295

The area of office productivity is one of the best provided for markets in terms of software. Office productivity tools are wordprocessors, databases and accountancy programs. It is becoming very common to pass data between the three types of program, and many programs incorporating all three programs are readily available.

Logotron have produced three separate programs that fulfil the functions of office productivity, they are Filer, Planner, and Writer 1295.

Each program makes use of the data from the others, so all sorts of possibilities are available. The three programs cannot be co-resident in memory at the same time, there is not enough memory for that in the C64!

There are many programs that do this sort of thing, but Logotron has one unique feature ... each program costs £12.95 hence the name! In general the programs are of a very high quality, and I have seen lots worse at three times the cost! Even though the quality of the programs is high, a few compromises have been made, in the documentation especially.

Each pm has a very similar operating system and it is pointless to repeat it for each separate program. The databases (Filer 1295) was the first that I looked at, and you will find most of the operational description within that part of the review. You will also find a few general comments about the documentation before the main reviews start.

The instructions are on one sheet of double sided A4 and are in a logical manner taking you through setting up a new database, Document or Spreadsheet entering information, editing and printing are all covered. However, they are slightly spoiled by giving instructions for two different computers (IBM and C64) and in some places they become confusing. The programs when run displays on the top line of the screen a number of main options which are selected by use of the left/right cursor key, as you position the cursor over each one in turn it is highlighted. You activate the function by pressing return. A pop down menu gives you a number of extra options which are selected by the cursor up/down key. The return key selects that option and RUN/STOP cancels most options. If you are unsure of the options function, pressing F2 gets a help file from the disk which gives a better guide to that option than that on the instruction sheet. The speed of the cursor when held down is quite fast and I found that it was easy to overshoot the option I wanted, and I had to resort to stabbing the cursor keys fast to avoid this problem.

FILER 1295

FILER 1295 is the database program. In its simplest form a database can be considered as a card index file system where the card box is the database itself. The cards are the records and each entry on the card is known as a field. Logotron claim up to 10,000 records per file! While this is true, only a limited amount of information may be stored on a database of 10,000 records. Below is a table showing the amount of information that can be stored with large numbers of records.

RECORDS	Fields	Chars per field
13412	1	1
10017	1	2
8029	1	3

I cannot think of many applications where you would want to store 10017 records of 2 characters each but it can be done if you need it. To give a better idea of the storage capacity of the program I used the following example to store names, addresses, and phone numbers of people.

NAME	(25 CHARACTERS LONG)
ADDR1	(25 CHARACTERS LONG)
ADDR2	(25 CHARACTERS LONG)
ADDR3	(25 CHARACTERS LONG)
POST CODE	(10 CHARACTERS LONG)
PHONE NUMBER	(15 CHARACTERS LONG)

> ***'The maximum information that can be stored is 10 fields of 25 characters which allows a maximum of 288 record.'***

Using the above record format on a formatted 1541 disk I was allowed a maximum of 515 records which would be quite enough for most people unless you are very gregarious. One small annoying feature is that you have to decide the maximum number of records you are going to use when you define the database (which also depends on the amount of space left on the disk) so while you can have more than one database per disk for larger applications it would be better to use one disk per database. The maximum information that can be stored is 10 fields of 25 characters which allows a maximum of 288 records.

As the program progresses it gives clear indications of what it is doing and what it wants you to do, but some of its error indications leave something to be desired. For instance, when you are setting up the format of a record for a new database, if you put a wrong format character in, it will tell you that there is an error but not where or what the error is, leaving you to figure it out. Similar problems occur with the print to screen option. If you enter a wrong value it just bleeps at you, not allowing you to continue and not showing you where the error is.

The program allows you to search through your database for anything in any field, I found that with a large numbers of records it took some time finding the relevant item if not searching by the keyfield. This may be due to the slow 1541 disk drive.

One problem that cannot be ignored is that the search is case sensitive which means the program thinks that SMITH, Smith and smith are all different names which is quite a bore. Unfortunately the program only allows printers connected to the serial port and so is no good to those connected to the user port.

WRITER 1295

The wordprocessor program 'writer 1295' is a very easy to use package that the user will find powerful enough to perform most of the wordprocessing requirements of say a small club. The program allows for the connection of CBM serial devices only, but if you have a serial to Centronics interface then there is no reason why you cannot connect an Epsom compatible printer. The program has a very useful function that allows the user to define a series of control numbers that will be sent to the printer to switch on various functions, such as NLQ mode, or underline.

The C64d screen in only 40 characters wide so the program does not provide a what you see is what you get function, but there is automatic wordwrap that prevents the words splitting across two lines. When you are ready to print there is a view function that enables you to use the 40 col. C64 screen as a window on the full 80 cols. of the document, thus you can get a good 'feel' as to the printed result.

In use the Writer 1295 has a strange feel to it, as you enter the text the screen will suddenly clear and you end up with a few lines of the text at the top of the screen. This may sound odd, but it does provide you with a clean screen to work on, and this will speed up the operation greatly, as the program does not have to deal with things like scrolling the screen.

> ***'All of the programs are very easy to use and you will find that they are very quick and simple to set up.'***

As well as the basic wordprocessing there is provision for mailmerge functions, so that you can create your own form letters. A large text memory space of over 20K is provided, so it is unlikely that you would run out of memory space. 20K is enough memory for about 4000 words. All the special printing functions are menu driven, F4 pops up a menu that you select the required function from. A check mark (tick) is placed in the left hand margin to indicate that a special function has been selected. There is no indication in the margin as to WHAT function has been selected, however as you move the cursor over each check mark the main status line indicates the particular function. The wordprocessor comes with a 100,000 word dictionary (on the flip side of the disk) that is very easy to use, BUT it does have a major problem, and that is the speed of operation. It takes ten minutes to check a document, I think this is due to the way that the search is done, the screen gives an indication of what is going on, and from this it appears that the program scans the whole dictionary every time you ask for a spell check. It seems that there is no attempt at the use of hash table search to reduce the time taken for the spell check. When the check is done you are presented with a window inviting you to correct each mistake in turn. It does not automatically correct identical errors nor is there any way to access the dictionary.

Planner 1295

This program is a simple-to-use spreadsheet that has most of the standard features that you would expect from any spreadsheet. It has a claimed 50,000 cells capacity but that depends on what you put into each cell! But for most purposes there is no problems with lack of cells. You can specify the titles and layout, and of course enter the data and formulae into the cells very quickly. However the documentation could be a bit better, it took a little while to find out how to enter a formula into a cell (you simply press =).

The spreadsheet is not very fast but it does the job. It took about 10 secs. to recalculate a 12 by 20 sheet, but that is not too bad as there are not too many applications that warrant the use of very large sheets. Once again an extensive help facility is provided via the function keys.

Logotron have ensured that all the three programs produce data files that are compatible with each other, so that you can link, say the names and addresses from the database into a form letter; or any othe rfunction that calls for this type of data interchange. All of the programs are very easy to use and you will find that they are very quick and simple to set up. All three of the programs deserve very high praise, as at the price they represent unbeatable value for the user. None of the programs is protected, so you can make backups of the programs to guard against accidents. If you are looking for a useful entry point at a budget price then you need look no further than Logotron. ***A.E.***

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continued

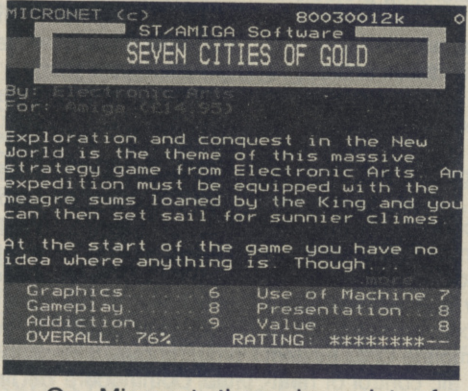
Micronet — a new look

Selina Scott, and the august Editor of CCI. So if you fancy yourself as a Robin Day in the making, now is your chance.

If you are a film fan, there are regular film reviews, and the latest records come in for the treatment from Micronet's self-styled music expert. There are also regular updates on the soaps along with reviews of holiday destinations. And if you add this to Prestel's education service, holiday info, Observer's news service and how ever many thousand other pages of information, there's a lot going on.

Thankfully the system is fairly easy to use, and the new look has meant better routing. The Prestel directory can seem rather daunting with its long lists of page numbers, but there is a system of keywords. This means you just enter where you want to go, e.g. *Amiga, and you will be taken straight to that page.

But what about that awful phrase 'phone bill', guaranted to strike fear into the heart of any potential on-line user. Well, as long as you do not use the system between 8am and 6pm (when there's a 6p per minute charge) your calls are charged at cheap rate, which is 5.06p for 6 minutes, or just over 50p an hour, which does seem to represent surprisingly good value for money.



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MICRONET (c)                 80030012k   o
         ST/AMIGA Software
        SEVEN CITIES OF GOLD
By: Electronic Arts
For: Amiga (£14.95)

Exploration and conquest in the New
World is the theme of this massive
strategy game from Electronic Arts. An
expedition must be equipped with the
meagre sums loaned by the King and you
can then set sail for sunnier climes.

At the start of the game you have no
idea where anything is. Though...
                                  more
  Graphics.......6   Use of Machine.7
  Gameplay.......8   Presentation...8
  Addiction......9   Value..........8
  OVERALL: 76%     RATING: ********--
```

On Micronet there is a lot of information, entertainment and the free telesoftware is definitely worth having. As the subscription works out at only £5.50 a month it also seems pretty good value for money.

For further information and a free demonstration Micronet has a free demo database (using a 1200/75 baud modem and viewdate software). Just dial 01-623 8855 and then enter the ID 4444444444 and the password 4444 to gain free access.

Contact: Micronet, Telempa Group Ltd., Tel: 01-278 3143 or Durrant House, 8 Herbal Hill, London EC1R 5EJ.

“Sphere”

Michael Crichton
(Macmillan Ltd. £10.95)

On the dust-jacket of Michael Crichton's ‘Sphere’ is a hologram of a hollowed out ‘O’ with what looks like a few pinpoints of light inside it. This is intended to illustrate the mysterious object which is the pivotal point of the story. As a gimmick the hologram is a novel (no pun intended!) idea, but no such device will induce the potential reader to buy the book unless the contents are also of sufficient interest. In this case, it certainly is.

Let me assure anyone intrigued by the hologram cover that not only is ‘Sphere’ an excellent story but also that it is told by a master of the genre. Not many books make this fairly blasé reviewer want to read on without pausing, this is one of the few that made me burn the midnight oil long into the night.

The skill of Michael Crichton is the way he manages to turn what could be a trite tale of a diverse group of people caught up in a desperate situation into a nail-biting, taut, suspenseful story.

Psychologist Norman Johnson, a civilian, has been almost forcibly recruited by the United States navy to accompany four other scientists–cum-medicos to investigate a cylindrical space ship that has been discovered a thousand feet down on the floor of the Pacific ocean.

According to the depth of the coral on its outer shell, it seems to have been there for at least three hundred years. It is also on the large side, having a diameter of 190 feet and being over half a mile in length.

Johnson and his companions are lodged in a subsea habitat, and it is from this, suitably equipped, that they venture forth to examine the cylinder. Inside it they find the silver sphere, thirty feet in diameter. It is what happens when Harry Adams, a mathematician/logician, manages to enter it that is the heart of the story.

Adams appears to trigger off a reaction inside the sphere which causes it to manufacture, among other things, a giant squid, lethal shrimps and clouds of poisonous gases which attack the habitat of the scientists and the naval personnel who have accompanied them.

The trouble is that no-one else is, for a while, able to find out how Harry Adams managed to gain entry to the sphere and Harry himself seems unable to remember, either. Then another of the scientists accomplishes it, too, and things suddenly go from bad to worse.

Eventually a computer link is established with the invisible entity who appears to reside inside the sphere. He calls himself ‘Jerry’ and seems to be a cross between a super-intelligence and a petulant child. A highly dangerous combination.

The scientists have been told that their undersea stay would only be for seventy-two hours but a violent storm blows up on the surface, forcing them to remain on the ocean bed for a further three days. Three days in which ‘Jerry’ makes life increasingly difficult for them – to put it mildly.

In a storyline a little reminiscent of Agatha Christie's ‘And Then There Were None’, one by one the crew and the scientists are exterminated, until just three remain. Which three they are and how the tension and suspicion between them grows is skilfully drawn. So much so that, by the penultimate chapter, even the reader is not sure which are the ‘goodies’ and which the ‘baddies’ or even if there are any ‘goodies’ left at all.

Michael Crichton's previous novels include ‘The Great Train Robbery’ which became a successful film and ‘The Andromeda Strain’ which was turned into a tense T.V. series. ‘Sphere’ confirms his place as one of the foremost SF authors.

D.M.

C64 Micro Mansion”

David Bonynge
(TAB Books ISBN 0-8306-1936-4 – £11.95)

Would you like a powerful yet easy way to reduce your heating and cooling costs, an inexpensive method to make your home safer, and a way to give yourself and your family greater convenience, comfort and enjoyment?

This book will show you how to transform a home computer and a few inexpensive gadgets into a Computer HOme (CHC) system that could provide cost-savings, convenience, comfort and enhanced safety for you and your family.

Controlling the operations of a home by computer for economy and efficiency is not new, but what is new – using this book – is the ease with which you can take advantage of this technology.

Some of the controls described are as easy to install as plugging a lamp into a socket and switching it on. Some do require simple skills, if you like to tinker and already have some experience with computers, there are still complicted challenging projects to do, and a few are provided. But it's not necessary to get involved with these unless you want to.

Some people will be most interested in the extensive cost-savings that are possible with CHC, while others are most concerned about home security and safety a few fun projects to enterain friends and family and provide some luxurious conveniences. If you want a complete CHC system that has it all: control of heating and cooling for cost-savings; improved security with burglar alarms, basement flood sensing, and smoke and heat detection; convenience with control of lights and appliances; the luxury of letting your computer decide when and how much to water your lawn, and more. It is here.

Chapter 1 gives a bird's-eye view of Computer Home Control: how to save money; how to improve home safety, security, convenience, etc.; what you need to know and do to select and install CHC.

Chapter 2 is a nontechnical overview of how Computer Home Control works. It explains the basic concepts that will help you understand whichever of the specific controls you decide to install in your home. It describes how the Commodore 64 finds out what's going on around your house, how you can order it to perform various control operations, how the computer affects what's happening based on your orders, and how you orchestrate all the pieces which must work together.

Chapter 3 surveys those controls that help you save money – controls for home heating and cooling and electric hot wat heating.

Chapter 4 identifies the types and locations of controls appropriate for your particular home. This chapter also begins to provide you with an overview of the Home Control products available commercially for your use.

The book, written with an American public in mind, certainly provides a stimulating view of what can be done with a 64 with a little imagination.

DB

Data-Store

Madhu Surendranath

Commodore C64

A very nice simple general purpose database. This program will have many uses. It is a long basic program, so take care when entering!. This program has been formatted for 'Easy-Enter' So watch out for the special [ ] codes! NOTE Tape or Disk use.

```
10 REM ****************************
20 REM * DATA-STORE. (C)MAR '88 *
30 REM *        WRITTEN           *
40 REM * BY MADHU   SURENDRANATH *
50 REM ****************************
60 CS$=CHR$(147):GY$=CHR$(155):CD$=CHR$(17):CL$=CHR$(157):RS$=CHR$(18)
70 RO$=CHR$(146):CU$=CHR$(145):CR$=CHR$(13):HO$=CHR$(19)
80 FILE=0:DIM FD$(10),RE$(10,200)
90 PRINTCS$ GY$:POKE53280,0:POKE53281,0
100 PRINT" ┌┐ ┌┐ ┬┬┐ ┌┐[SP4]┌┐ ┬┬┐ ┌┐ ┌┐ ┌┐":X=FILE
110 PRINT" | | ├┤[SP2]|[SP2]├┤ ─ └┐[SP2]|[SP2]| | ├┘ ├─ "
120 PRINT" └┘ ╯ ╲[SP2]┴[SP2]╯ ╲[SP4]└┘ [SP2]┴[SP2]└┘ ┴└┘ └┘"
130 PRINTCD$ TAB(9)"BY MADHU SURENDRANATH"
140 PRINTTAB(9)"────────────────────────"
150 PRINTRS$ TAB(16)" MENU "RO$
160 PRINTTAB(15)"========"RO$
170 PRINTCD$ TAB(10)"1) CREATE FIELDS"
180 PRINTTAB(10)"2) ADD RECORD TO FILE"
190 PRINTTAB(10)"3) VIEW THE RECORDS"
200 PRINTTAB(10)"4) DISC OPERATIONS"
210 PRINTTAB(10)"5) TAPE OPERATIONS"
220 PRINTTAB(10)"6) PRINTOUT RECORDS"
230 PRINTTAB(10)"7) MODIFY RECORDS"
240 PRINTTAB(10)"8) SORT/SEARCH"
250 PRINTTAB(10)"9) QUIT PROGRAM"
260 PRINTCD$" TYPE IN THE REQUIRED FUNCTION (1-9)";
270 GETF$:IFVAL(F$)<1ORVAL(F$)>9THEN270
280 F=VAL(F$)
290 PO=1864-((10*40)-F*40+30)-40
300 POKEPO,176+F:POKE54272+PO,1
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```
310 FORJ=1TO023:N=PEEK(PO+J)+128:POKEPO+J,N:POKE54272+(PO+J),1:NEXTJ
320 FORJ=0TO500:NEXTJ
330 PRINTHO$;
340 FORJ=0TO998:PRINT" ";:NEXT
350 ON F GOSUB 380,750,960,1210,2810,3130,3960,4500
360 IFF=9THEN5140
370 GOTO 90
380 REM·* CREATE FIELDS *
390 PRINTCS$ CD$;
400 PRINT"[SP2]FIELD CREATION FOR "RS$"DATA-STORE"RO$
410 PRINT"[SP2]****************************":FILE=0
420 PRINTCD$"[SP2]MIN NUMBER OF FIELDS = 1"
430 PRINT"[SP2]MAX NUMBER OF FIELDS = 10"
440 PRINT CD$ "[SP2]";
450 INPUT"HOW MANY FIELDS DO YOU REQUIRE";NU
460 IFNU<1ORNU>10THEN390
470 PRINT:FORA=1TONU
480 PRINT"[SP2]FIELD NO:-";A;
490 INPUT FD$(A)
500 IFLEN(FD$(A))>11THENPRINT"[SP2]"RS$"FIELD"A"IS TOO LONG":GOTO490
510 NEXTA
520 PRINT
530 PRINT"[SP2]ANY ERRORS NOTICED (Y/N)[SP2]N"CL$+CL$+CL$;
540 INPUTAN$
550 IFAN$="Y"THEN590
560 IFAN$="N"THEN680
570 IFAN$<>"Y"ORAN$<>"N"THEN580
580 PRINTCU$;:GOTO530
590 PRINT
600 PRINT"[SP2]WHAT FIELD HAS THE ERROR (1-"NU""CL$")";
610 FL=0:INPUT FL
620 IFFL<1ORFL>NUTHENPRINTCU$;:GOTO590
630 PRINTCD$"[SP2]FIELD :-";FL;"EQUALS :-"RS$ FD$(FL)
640 PRINTCD$"[SP2]CHANGES TO :- "RS$;
650 INPUT FD$(FL)
660 PRINT
670 GOTO530
680 PRINTCD$"[SP2]COMPLETED LIST OF FIELDS ARE :-"
690 FORA=1TONU
700 PRINT"[SP2]FIELD :-";A;" ";FD$(A)
710 NEXTA
720 PRINTCD$ CD$"[SP2]PRESS "RS$"[SPACE]"RO$" TO RETURN TO MENU"
730 GETA$:IFA$<>" "THEN730
740 RETURN
750 REM * ADD THE RECORDS *
760 FILE=FILE+1:X=FILE
770 IFFD$(1)=""THENPRINT" "CS$ CD$ CD$ RS$"ERROR"RO$" :-";
780 IFFD$(1)=""THENPRINT" NO FILE HAS BEEN CREATED":FORJ=1TO800:NEXT:RETURN
790 PRINTCS$ CD$ CD$"[SP5]ADDING RECORDS TO "RS$"DATA-STORE"RO$
800 PRINT"[SP5]***************************"
810 PRINTTAB(12)CD$ "RECORD :-"FILE
820 PRINT
830 FORJ=1TONU:PRINTTAB(12-LEN(FD$(J)))FD$(J):PRINT:NEXTJ
840 FORJ=1TONU:PRINTCU$ CU$;:NEXTJ
850 FORJ=1TONU:PRINTTAB(13)":";:INPUTRE$(J,FILE)
860 IFLEN(RE$(J,FILE))<56THENCR$=CHR$(13)+CU$
870 PRINTCR$:NEXTJ
880 PRINTCD$"[SP5]"RS$"[RETURN]"RO$"[SP6]TO ADD MORE FILES"
890 PRINT"[SP5]"RS$"[ SPACE]"RO$"[SP6]TO RETURN TO MENU"
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```
900 GETK$:IFK$<>CHR$(13)ANDK$<>" "THEN900
910 IFK$=CR$THEN
920 IFK$=" "THENRETURN
930 IFFILE=200THENPRINT" "CD$ RS$"ERROR"RO$" :- NO MORE ROOM IN THE FILE"
940 IFFILE=200THENPRINTCD$" PLEASE CREATE ANOTHER FILE":FORJ=1TO700:NEXT:
 RETURN
950 GOTO750
960 REM * VIEWING RECORDS *
970 IFFD$(1)=""THENPRINT" "CS$ CD$ CD$ RS$"ERROR"RO$" :-";
980 IFFD$(1)=""THENPRINT" NO FILE HAS BEEN CREATED":FORJ=1TO800:NEXT:
 RETURN
990 F1=FILE
1000 PRINTCS$ CD$ CD$" PLEASE INPUT THE FILE REQUIRED (1-"FILE""CL$")"
1010 PRINTCD$ " "RS$"0"RO$" TO ABORT, NUMBER :-";
1020 INPUT V:IFV=0THENRETURN
1030 IFV<1ORV>FILE THENPRINT CL$ CL$;:GOTO1010
1040 FILE=V
1050 PRINT CS$ CD$ CD$ TAB(12)"VIEWING RECORDS"
1060 PRINTTAB(12)"***************"
1070 PRINTCD$ TAB(13)"RECORD NO :-"FILE
1080 PRINT
1090 FORJ=1TONU
1100 PRINTTAB(12-LEN(FD$(J)))FD$(J)" : "RE$(J,FILE):PRINT
1110 NEXTJ
1120 PRINTCD$ TAB(10) RS$"[F1]"RO$" TO SCROLL BACKWARDS"
1130 PRINTTAB(10) RS$"[F7]"RO$" TO SCROLL FORWARDS"
1140 PRINTCD$ TAB(7) RS$"[SPACE]"RO$" TO RETURN TO MENU"
1150 F1$=CHR$(133):F7$=CHR$(136)
1160 GETK$:IFK$<>F1$ANDK$<>F7$ANDK$<>" "THEN1160
1170 IFK$=F1$THENFILE=FILE-1:IFFILE<=1THENFILE=1:GOTO1050
1180 IFK$=F7$THENFILE=FILE+1:IFFILE=>F1THENFILE=F1:GOTO1050
1190 IFK$=" "THENFILE=F1:RETURN
1200 GOTO1050
1210 REM * DISK OPERATIONS *
1220 PRINT CS$:IFF=9THENF=0:RETURN
1230 PRINT"[SP2]┌┐ ┬ ┌─┐ ┌─┐"
1240 PRINT"[SP2]│ │ │ └─┐ │[SP3]"RS$" OPERATIONS "RO$
1250 PRINT"[SP2]└┘ ┴ └─┘ └─┘"
1260 PRINT CD$ RS$ TAB(17)" MENU "RO$
1270 PRINT TAB(16)"========"
1280 PRINT CD$ TAB(10)"1) LOAD FILE"
1290 PRINTTAB(10)"2) SAVE/REPLACE FILE"
1300 PRINTTAB(10)"3) DISC DIRECTORY"
1310 PRINTTAB(10)"4) DELETE FILE"
1320 PRINTTAB(10)"5) VALIDATE DISC"
1330 PRINTTAB(10)"6) ERROR CHECKER"
1340 PRINTTAB(10)"7) FORMAT DISC"
1350 PRINTTAB(10)"8) RENAME FILE"
1360 PRINTTAB(10)"9) BACK TO MENU"
1370 PRINT CD$" TYPE IN THE REQUIRED FUNCTION (1-9)";
1380 GETF$:IFVAL(F$)<1ORVAL(F$)>9THEN1380
1390 F=VAL(F$)
1400 PO=1784-((10*40)-F*40+30)-40
1410 POKEPO,176+F:POKE54272+PO,1
1420 FORJ=1TO20:N=PEEK(PO+J)+128:POKEPO+J,N:POKE54272+(PO+J),1:NEXTJ
1430 FORJ=1TO500:NEXTJ
1440 PRINT HO$;
1450 FORJ=0TO998:PRINT" ";:NEXTJ
1460 ON F GOTO 1480,1640,1810,2140,2320,2430,2560,2690
1470 GOTO1220
```

```
1480 REM * LOAD FILE *
1490 PRINTCS$ CD$" "RS$"LOADING"RO$" FILES"
1500 PRINT" ============="
1510 PRINT CD$" TYPE IN NAME OF THE FILE TO BE LOADED"
1520 PRINT"[SP2]"CD$ RS$"FILE"RO$;:INPUT Q$
1530 IFQ$=""THEN1470
1540 OPEN 1,8,2,"0:"+Q$+",S,R"
1550 INPUT#1,NU
1560 FORJ=1TONU:INPUT#1,FD$(J):NEXTJ
1570 INPUT#1,FILE
1580 FORJ=1TOFILE:FORK=1TONU:INPUT#1,RE$(K,J)
1590 PRINTCD$"[SP3]LOADING "RS$"RECORD"RO$""J"" CR$ CU$ CU$;
1600 NEXTK:NEXTJ:CLOSE1
1610 PRINT CD$ CD$;
1620 FORK=1TO1000:NEXTK:IFPEEK(186)=1THEN2810
1630 GOTO1470
1640 REM * SAVE / REPLACE FILE *
1650 PRINTCS$ CD$" "RS$"SAVING"RO$" FILES"
1660 PRINT" ============"
1670 PRINT CD$" TYPE IN THE FILENAME FOR THE SAVE"
1680 PRINT"[SP2]"CD$ RS$"FILE"RO$;:INPUTQ$:IFQ$=""THEN1470
1690 OPEN15,8,15,"S0:"+Q$:CLOSE15
1700 OPEN1,8,2,"0:"+Q$+",S,W"
1710 PRINT#1,NU:PRINT#1,CHR$(13)
1720 FORJ=1TONU:PRINT#1,FD$(J):PRINT#1,CHR$(13):NEXTJ
1730 PRINT#1,FILE:PRINT#1,CHR$(13)
1740 FORJ=1TOFILE:FORK=1TONU
1750 PRINT#1,RE$(K,J)
1760 PRINTCD$"[SP2]SAVING "RS$"RECORD"RO$""J"" CR$ ;
1770 PRINTHO$ CD$ CD$ CD$ CD$ CD$ CD$;:NEXTK:NEXTJ:CLOSE1
1780 PRINTCD$ CD$
1790 FORK=1TO1000:NEXTK:IFPEEK(186)=1THEN2810
1800 GOTO1470
1810 REM * DISC DIRECTORY *
1820 PRINT CS$ CD$ TAB(11)"** "RS$"DISC DIRECTORY"RO$" **"
1830 PRINT CD$ TAB(5)"PRESS [SPACE] TO PAUSE SCROLLING"
1840 PRINT CD$ TAB(9)"HIT [RETURN] TO START":PRINT
1850 GETQ$:IFQ$<>CHR$(13)THEN1850
1860 ZZ=0:ZZ$="[SP3]"
1870 OPEN2,8,15:OPEN1,8,0,"$0"
1880 GET#1,A$,B$
1890 GET#1,A$,B$
1900 GET#1,A$,B$
1910 C=0
1920 IFA$<>""THENC=ASC(A$)
1930 IFB$<>""THENC=C+ASC(B$)*256
1940 PRINT ZZ$;ZZ;RS$;MID$(STR$(C),2);TAB(3)RO$" ";TAB(10);
1950 IFZZ>8THENZZ$="[SP2]"
1960 IFZZ>98THENZZ$=" "
1970 ZZ=ZZ+1
1980 GET#1,B$:IFST<>0THEN2080
1990 IFB$<>CHR$(34)THEN1980
2000 GET#1,B$:IFB$<>CHR$(34)THENPRINTB$;:GOTO2000
2010 GET#1,B$:IFB$=CHR$(32)THEN2010
2020 C$=""
2030 C$=C$+B$:GET#1,B$:IFB$<>""THEN2030
2040 PRINTTAB(29);RS$ LEFT$(C$,3)
2050 GETD$:IFD$=" "THENFORK=1TO2000:NEXTK
2060 IFST=0THEN1890
2070 CLOSE1:CLOSE2
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2080 FORJ=1TO8:PRINTCL$;:NEXTJ
2090 PRINT"[SP4]";TAB(10);
2100 PRINT;"BLOCKS FREE."
2110 CLOSE1:CLOSE2
2120 FORK=1TO3000:NEXTK
2130 GOTO1470
2140 REM * DELETE FILE *
2150 PRINT CS$ CD$" "RS$"DELETING"RO$" FILES"
2160 PRINT" =============="
2170 PRINT CD$"[SP2]TYPE IN THE FILENAME TO BE DELETED"
2180 PRINT"[SP2]"RS$ CD$"FILE"RO$;
2190 INPUTN$
2200 IFN$=""THEN1470
2210 GOSUB 2230
2220 GOTO 2270
2230 PRINT:INPUT" ARE YOU SURE (Y/N)";Q$
2240 IFQ$<>"Y"ANDQ$<>"N"THEN2230
2250 IFQ$="N"THEN1470
2260 RETURN
2270 OPEN 15,8,15
2280 PRINT#15,"S0:"+N$
2290 CLOSE15
2300 PRINT CD$"[SP2]FINISHED..."
2310 FORK=1TO1000:NEXTK:GOTO1470
2320 REM * VALIDATE DISC *
2330 PRINT CS$ CD$" "RS$"VALDATING"RO$" DISC"
2340 PRINT" ==============="
2350 PRINT CD$" "RS$"WARNING"RO$" :- THIS COMMAND DELETES 'REL'
     [SP3]FILES"
2360 PRINT CD$;:GOSUB2230
2361 END
2370 OPEN15,8,15
2380 PRINT#15,"V0:"
2390 CLOSE15
2400 PRINT CD$"[SP2]FINISHED..."
2410 FORK=1TO1000:NEXT K
2420 GOTO1470
2430 REM * ERROR CHECKER *
2450 PRINT CS$ CD$" "RS$"DISC ERROR CHECKER"RO$
2460 PRINT" =================="
2470 OPEN15,8,15
2480 INPUT#15,E,M$,ET,ES
2490 CLOSE15
2500 PRINT" "RS$ CD$"ERROR NO.[SP2]:-"RO$;" "E
2510 PRINT" "RS$ CD$"ERROR[SP6]:-"RO$;" "M$
2520 PRINT" "RS$ CD$"TRACK NO.[SP2]:-"RO$;" "ET
2530 PRINT" "RS$ CD$"SECTOR NO. :-"RO$;" "ES
2540 FORK=1TO2000:NEXTK
2550 GOTO1470
2560 REM * FORMAT DISC *
2570 PRINT CS$ CD$" "RS$"FORMATTING"RO$" THE DISC"
2580 PRINT" ==================="
2590 PRINT CD$" "RS$"WARNING"RO$":- THIS COMMAND WILL DESTROY ALL DATA"
2600 PRINT CD$ CD$" NEW FILE HEADER :";:INPUT HE$
2610 PRINT CD$" NEW ID :";:INPUT I$
2620 PRINT CD$;:GOSUB2230
2630 OPEN 15,8,15
2640 PRINT#15,"N0:"+HE$+","+I$
2650 CLOSE15
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2660 PRINT CD$"[SP2]FINISHED..."
2670 FORK=1TO1000:NEXTK
2680 GOTO1470
2690 REM * RENAME FILES *
2700 PRINT CS$ CD$" "RS$"RENAMING"RO$" THE FILES ON DISC"
2710 PRINT" =========================="
2720 PRINT CD$" OLD FILE NAME";:INPUT O$
2730 PRINT CD$" NEW FILE NAME";:INPUT N$
2740 PRINT CD$;:GOSUB2230
2750 OPEN15,8,15
2760 PRINT#15,"R0:"+N$+"=0:"+O$
2770 CLOSE15
2780 PRINT CD$"[SP2]FINISHED..."
2790 FORK=1TO1000:NEXTK
2800 GOTO1470
2810 REM * TAPE OPERATIONS *
2820 PRINTCS$ CD$" ┬┬┬ ╭─╮ ╭─╮ ┌──":IFF=3THENRETURN
2830 PRINT"[SP2]|[SP2]├─┤ ├─╯ ├[SP2]"RS$" OPERATIONS "
2840 PRINT"[SP2]┴[SP2]╯ ╰ ┴[SP3]└─┘"
2850 PRINT CD$ TAB(10)"1) LOAD FILE"
2860 PRINT TAB(10)"2) SAVE FILE"
2870 PRINT TAB(10)"3) BACK TO MENU"
2880 PRINT CD$" TYPE IN THE REQUIRED FUNCTION (1-3)";
2890 GETF$:IFF$<"1"ORF$>"3"THEN2890
2900 F=VAL(F$)
2910 PO=1584-((10*40-F*40+30)-40)
2920 POKE PO,176+F:POKE54272+PO,1
2930 FORJ=1TO15:N=PEEK(PO+J)+128:POKEPO+J,N:POKE54272+PO+J,1:NEXTJ
2940 FORK=1TO500:NEXTK
2950 PRINTHO$;:FORJ=1TO998:PRINT" ";:NEXT
2960 ON F GOTO 2980,3060
2970 GOTO 2810
2980 REM * LOAD FILE *
2990 PRINT CS$ CD$" "RS$"LOADING FILES"RO$
3000 PRINT" =============="
3010 PRINT CD$" TYPE IN THE NAME OF THE REQUIRED FILE"
3020 PRINT" "RS$"FILE"RO$;
3030 INPUT Q$:IFQ$=""THEN2970
3040 OPEN1,1,0,Q$
3050 GOTO 1550
3060 REM * SAVE FILE *
3070 PRINT CS$ CD$" "RS$"SAVING FILES"RO$
3080 PRINT CD$" TYPE IN THE SAVING FILENAME"
3090 PRINT" "RS$"FILE"RO$;
3100 INPUT Q$:IFQ$=""THEN2970
3110 OPEN1,1,1,Q$
3120 GOTO1710
3130 REM * PRINTOUT RECORDS *
3140 PRINT CS$ TAB(2) RS$"[SP18]"RO$:IFF=5THENRETURN
3150 PRINT TAB(2) RS$" PRINTOUT RECORDS "RO$" MENU"
3160 PRINT TAB(2) RS$"[SP18]"RO$
3170 PRINT CD$ "* PLEASE ENSURE THAT THE PRINTER IS ON *"
3180 PRINT CD$ TAB(10)"1) PRINTOUT WHOLE FILE"
3190 PRINT TAB(10)"2) PRINTOUT SELECTIVE RECORDS"
3200 PRINT TAB(10)"3) LABELS FOR WHOLE FILE"
3210 PRINT TAB(10)"4) LABELS SELECTIVE"
3220 PRINT TAB(10)"5) BACK TO MAIN MENU"
3230 PRINT CD$ CD$" TYPE IN THE REQUIRED FUNCTION (1-5)"
3240 GET F$:IFVAL(F$)<1ORVAL(F$)>6THEN3240
3250 F=VAL(F$)
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3260 PO=1544-((5*40)-F*40+30)-40
3270 POKE PO,176+F:POKE54272+PO,1
3280 FORJ=1TO28:N=PEEK(PO+J)+128:POKE PO+J,N:POKE54272+PO+J,1:NEXTJ
3290 FORJ=1TO1000:NEXTJ
3300 PRINTHO$;:FORJ=1TO998:PRINT" ";:NEXTJ
3310 ON F GOTO 3330,3510,3690,3830
3320 GOTO 3140
3330 PRINT CS$ CD$" PRINTING OUT THE WHOLE FILE"
3340 PRINT CD$" RECORDS (1-"FILE")"
3350 PRINT CD$" TO HALT PRINTING PRESS "RS$" SPACE "RO$
3360 PRINT CD$ CD$ TAB(5)" PRESS "RS$" SPACE "RO$" TO START...."
3370 GETA$:IFA$<>CHR$(32)THEN3370
3380 OPEN4,4:CMD4
3390 FORJ=1TOFILE
3400 FORQ=1TO40:PRINT#4,"-";:NEXTQ
3410 PRINT#4
3420 FORK=1TONU
3430 A=12-LEN(FD$(K)):IFK=1ANDJ=1THENA=A-1
3440 FORQ=1TOA:A$=A$+" ":NEXTQ
3450 PRINT#4,A$+FD$(K)+":"+RE$(K,J)
3460 A$="":NEXTK
3470 GETW$:IFW$=CHR$(32)THEN3500
3480 NEXTJ
3490 FORQ=1TO40:PRINT#4,"-";:NEXTQ
3500 PRINT#4:PRINT#4:PRINT#4:CLOSE4:GOTO3130
3510 REM *  SELECTIVE RECORDS *
3520 PRINT CS$ CD$" SELECTIVE RECORDS"
3530 PRINT CD$" RECORDS (1-"FILE")"
3540 PRINT CD$" TO STOP PRESS "RS$" * "RO$
3550 PRINT CD$ CD$" TYPE IN THE RECORD TO BE PRINTED"
3560 INPUT" ";A$:IFA$<>"*"ANDVAL(A$)<1ORVAL(A$)>FILE THEN3550
3570 IFA$="*"THEN3130
3580 PRINT CD$" PRINTING RECORD :-";A$:A=VAL(A$)
3590 OPEN4,4:CMD4
3600 FORQ=1TO40:PRINT#4,"-";:NEXTQ
3610 PRINT#4
3620 FORK=1TONU
3630 B=12-LEN(FD$(K))
3640 FORQ=1TOB:B$=B$+" ":NEXTQ
3650 PRINT#4,B$+FD$(K)+":"+RE$(K,A)
3660 NEXTK
3670 FORQ=1TO40:PRINT#4,"-";:NEXTQ
3680 PRINT#4:PRINT#4:CLOSE4:GOTO3510
3690 REM * LABELS FOR WHOLE FILE *
3700 PRINT CS$ CD$" LABEL PRINTOUT FOR WHOLE FILE"
3710 PRINT CD$" RECORDS (1-"FILE")"
3720 PRINT CD$" TO HALT PRINTING PRESS "RS$" SPACE "RO$
3730 PRINT CD$ CD$ TAB(5)" PRESS "RS$" SPACE "RO$" TO START...."
3740 GETA$:IFA$<>CHR$(32)THEN3740
3750 OPEN4,4:CMD4
3760 FORJ=1TOFILE
3770 FORK=1TONU
3780 PRINT#4,"[SP2]"+RE$(K,J)
3790 GETW$:IFW$=CHR$(32)THEN3820
3800 NEXTK:PRINT#4:PRINT#4:PRINT#4:PRINT#4
3810 NEXTJ
3820 PRINT#4:CLOSE4:GOTO3130
3830 REM * SELECTIVE LABELS *
3840 PRINT CS$ CD$" SELECTIVE LABELS"
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3850 PRINT CD$" RECORDS (1-"FILE")
3860 PRINT CD$" TO STOP PRESS "RS$" * "RO$
3870 PRINT CD$ CD$" TYPE IN THE RECORD TO BE PRINTED"
3880 INPUT" ";A$:IFA$<>"*"ANDVAL(A$)<1ORVAL(A$)>FILE THEN 3870
3890 IFA$="*"THEN3130
3900 PRINT CD$" PRINTING RECORD :-";A$:A=VAL(A$)
3910 OPEN4,4:CMD4
3920 FORK=1TONU
3930 PRINT#4,"[SP2]"+RE$(K,A)
3940 NEXTK
3950 PRINT#4:CLOSE4:GOTO3830
3960 REM * MODIFYING *
3970 PRINT CS$ TAB(2) RS$"[SP11]":IFF=3THENRETURN
3980 PRINT TAB(2) RS$" MODIFYING "RO$" MENU"
3990 PRINT TAB(2) RS$"[SP11]"
4000 PRINT CD$ CD$ TAB(10)"1) MODIFY A RECORD"
4010 PRINT TAB(10)"2) DELETE A RECORD"
4020 PRINT TAB(10)"3) BACK TO MAIN MENU"
4030 PRINT CD$" TYPE IN THE REQUIRED FUNCTION (1-3)"
4040 GETF$:IFVAL(F$)<1ORVAL(F$)>3THEN4040
4050 F=VAL(F$):PO=1384-((3*40)-F*40+30)-40
4060 POKE PO,176+F:POKE54272+PO,1
4070 FORJ=1TO21:N=PEEK(PO+J)+128:POKE PO+J,N:POKE54272+PO+J,1:NEXTJ
4080 FORK=1TO1000:NEXTK:PRINTHO$;:FORJ=1TO998:PRINT" ";:NEXTJ
4090 ON F GOTO 4110,4330
4100 GOTO3960
4110 REM * MODIFY RECORDS *
4120 PRINT CS$ CD$" MODIFYING A RECORD"CD$" RECORDS (1-"FILE")"
4130 PRINT CD$" TYPE "RS$" 0 "RO$" TO ABORT"
4140 PRINT CD$ CD$" TYPE IN THE RECORD NO. TO BE MODIFIED"
4150 A$="":INPUT" ";A$
4160 IFVAL(A$)<0ORVAL(A$)>FILE THEN4110
4170 IFVAL(A$)=0THEN3970
4180 PRINT CS$ CD$" RECORD NO :-";A$
4190 A=VAL(A$):PRINT CD$;
4200 FORK=1TONU
4210 PRINTTAB(12-LEN(FD$(K)));FD$(K);
4220 PRINTTAB(13)":[SP2]"RE$(K,A)
4230 PRINT
4240 NEXTK
4250 FORK=1TONU
4260 PRINT CU$;CU$;
4270 NEXTK
4280 FORJ=1TONU
4290 PRINTTAB(13)":";:INPUTRE$(J,A)
4300 PRINT
4310 NEXTJ
4320 GOTO3970
4330 REM * DELETING RECORDS *
4340 PRINT CS$ CD$" DELETING A RECORD"CD$" RECORDS (1-"FILE")
4350 PRINT CD$" TYPE "RS$" 0 "RO$" TO ABORT"
4360 PRINT CD$ CD$" TYPE IN THE RECORD NO. TO BE DELETED"
4370 A$="":INPUT" ";A$
4380 IF VAL(A$)<0ORVAL(A$)>FILE THEN4330
4390 IFVAL(A$)=0THEN3970
4400 PRINT CS$ CD$" RECORD NO:- ";A$
4410 A=VAL(A$):FORK=1TONU
4420 RE$(K,A)="":NEXTK
4430 FORK=ATOFILE-1
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4440 FORJ=1TONU
4450 RE$(J,K)=RE$(J,K+1)
4460 NEXTJ
4470 NEXTK
4480 FILE=FILE-1
4490 GOTO3970
4500 REM ** SORT / SEARCH **
4510 PRINT CS$ TAB(2) RS$"[SP15]":IFF=3THENRETURN
4520 PRINT TAB(2) RS$" SORT / SEARCH "RO$" MENU"
4530 PRINT TAB(2) RS$"[SP15]"
4540 PRINT CD$ CD$ TAB(10)"1) SORT FILE"
4550 PRINT TAB(10)"2) SEARCH THROUGH FILE"
4560 PRINT TAB(10)"3) BACK TO MAIN MENU"
4570 PRINT CD$" TYPE IN THE REQUIRED FUNCTION (1-3)"
4580 GETF$:IFF$<"1"ORF$>"3"THEN4580
4590 F=VAL(F$):PO=1384-((3*40)-F*40+30)-40
4600 POKE PO,176+F:POKE54272+PO,1
4610 FORJ=1TO21:N=PEEK(PO+J)+128:POKEPO+J,N:POKE54272+PO+J,1:NEXTJ
4620 PRINT HO$;
4630 FORJ=1TO500:NEXTJ
4640 FORJ=1TO998:PRINT" ";:NEXT
4650 ON F GOTO 4670,4940
4660 GOTO4500
4670 REM * SORTING FILE *
4680 PRINT CS$ CD$" SORTING FILE"
4690 PRINT CD$;:FORJ=1TONU
4700 PRINT J")[SP2]";FD$(J)
4710 NEXTJ
4720 PRINT CD$ " TYPE IN THE FIELD NO. FOR THE SORT ";
4730 INPUTA$:IFA$<"1"ORVAL(A$)>NUTHEN4730
4740 A=VAL(A$)
4750 PRINT CD$" SORTING....."CD$"PLEASE WAIT..."
4760 TI$="000000"
4770 M=1
4780 T=0:FORI=1TO(FILE-M):IFRE$(A,I)=RE$(A,I+1)THEN4850
4790 IFRE$(A,I)<RE$(A,I+1)THEN4850
4800 FORJ=1TONU
4810 S$=RE$(J,I)
4820 RE$(J,I)=RE$(J,I+1)
4830 RE$(J,I+1)=S$
4840 NEXTJ:T=1
4850 NEXT I
4860 M=M+1
4870 IFT=0THEN4910
4880 GOTO 4780
4890 REM
4900 REM
4910 PRINT CD$" SORTING COMPLETED"
4920 PRINT CD$" TIME TAKEN "TI$
4930 FORK=1TO2000:NEXTK:GOTO 4660
4940 REM ** SEARCHING THROUGH FILE **
4950 PRINT CS$ CD$" SEARCHING THROUGH FILE"
4960 PRINT CD$;:FORJ=1TONU
4970 PRINT J")[SP2]";FD$(J)
4980 NEXTJ
4990 PRINT CD$ " TYPE IN THE FIELD NO. FOR THE SEARCH ";RS$;
5000 INPUTA$:IFA$<"1"ORVAL(A$)>NUTHEN5000
5010 PRINT CD$" WHAT IS THE INFORMATION"
5020 INPUT"[SP2]";S$
5030 IFS$=""THEN4660
```

```
5040 PRINT CD$" SEARCHING....."CD$"PLEASE WAIT"
5050 TI$="000000":A=VAL(A$)
5060 FORJ=1TOX:J$=STR$(J)
5070 FORK=1TOLEN(RE$(A,J))
5080 IFMID$(RE$(A,J),K,(LEN(S$)-1+K))=S$THEN PRINT J$",";
5090 NEXTK
5100 NEXTJ
5110 PRINT CD$" THESE RECORDS ABOVE CONTAIN "S$"."
5120 FORK=1TO2000:NEXTK
5130 GOTO4660
5140 REM * QUIT PROGRAM *
5150 PRINT CS$
5160 PRINT" ARE YOU SURE (Y/N)";
5170 INPUTA$
5180 IFA$="N"THEN90
5190 PRINT CS$
5200 PRINT" THANK YOU FOR USING THE DATA-STORE[SP6]DATABASE."
5210 PRINT
5220 PRINT" DATA-STORE IS (C) MADHU SURENDRANATH[SP4]1988."
5230 END
```

FX Creator

Commodore C64

This program is a very good utility that enables the user to create custom sound effects and generate a sequence of numbers that will generate a machine code representation of the sounds for use in your own programs. FX Creator is fully menu driven, the F1 and F3 Keys move the cursor and the space bar selects the option.

```
10 rem ***                   ***
20 rem *** mc fx creator ***
30 rem *** by rik beaven ***
40 rem ***                   ***
50 dimss(26,10),tx$(10),ra(10),cs(10),wa$(3),rm$(1):cl$="[SP7]":poke650,128
60 lw(0)=0:lw(1)=0:lw(2)=0:dimda(41)
70 poke53280,0:poke53281,0:print"[CLR][LGRN]",chr$(14),chr$(8):poke54296,15
80 li$="────────────────────────────────────────"
90 tl$="[HOM]MC FX creator[SP10](C) R.Beaven '87 "+li$
100 data" Waveform[SP2]","Voice","Low frequency","High frequency","Attack","Deca
y"
110 data"Sustain","Release","Ring modulation","Synchronisation","Pulse rate"
120 data -4,-3,255,255,15,15,15,15,0,0,4095
130 fora=0to10:readtx$(a):next
140 fora=0to10:readra(a):next
150 sn=0:vo=15:goto370
160 rem *** setup variables ***
170 fora=0to10:cs(a)=ss(sn,a):next:ifcs(1)=0thencs(1)=1
180 return
190 rem *** refresh variables ***
```

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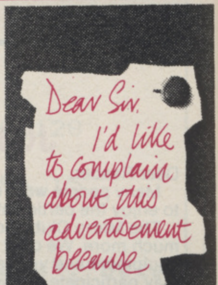

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```
200 print"[HOM][CD2]SOUND ";chr$(193+sn):printli$;
210 print"[SP2]";tx$(0),wa$(cs(0));"[SP3]"
220 fora=1to7
230 print"[SP2]";tx$(a);
240 printtab(25);cs(a);"[CL][SP3]":next
250 fora=8to9
260 print"[SP2]";tx$(a);
270 printtab(25);rm$(cs(a)):next
280 print"[SP2]";tx$(10);tab(25);cs(10);"[CL][SP3]"
290 printli$;
300 print"[CR2] PLAY SOUND EFFECT."
310 print"[CR2]SILENCE SOUND EFFECTS."
320 print"[CR2]VOLUME";vo;"[CL]. "
330 print"[CR2]CLEAR SOUND EFFECT."
340 print"[CR2]LIST DATA FOR EFFECT."
350 print"[CR2]EXIT PROGRAM."
360 return
370 rem 49152/49186
380 ba=49152 :ln=470
390 cs=0:ct=0
400 read a:if a>255 then print"data range error in line ";ln
410 if a=-1 then 580
420 cs=cs+a:poke ba,a:ba=ba+1:ct=ct+1
430 if ct<>8 then 400
440 read ck:if ck<> cs then print"checksum error in line ";ln:end
450 ln=ln+10:goto 390
460 pokeba,a:ba=ba+1:goto390
470 data 169,000,133,251,169,216,133,252,1323
480 data 160,000,173,167,002,145,251,230,1128
490 data 251,208,002,230,252,165,252,201,1561
500 data 219,208,239,165,251,201,232,208,1723
510 data 233,096,169,000,133,251,169,004,1055
520 data 133,252,174,167,002,202,224,000,1154
530 data 240,016,165,251,024,105,040,133,0974
540 data 251,165,252,105,000,133,252,076,1234
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560 data 145,251,200,192,039,208,245,096,1376
570 data -1
580 fora=0to3:readq$:wa$(a)="[SP5]"+q$:next
590 data" TRIANGLE"," SAWTOOTH"," PULSE"," NOISE"
600 rm$(0)=" OFF":rm$(1)=" ON ":goto660
610 rem *** command line ***
620 print"[HOM][CD21]"
630 printli$:print:printli$;:print"[CU2][CR]";
640 print"[CR2]COMMAND LINE|[CU][CL]┬[CL][CD2]┴[CU]";cl$;"[CU]┬[CD][CL]|[CD][CL]
[CU] >[SP10]";
650 print"[CL9]";:return
660 print"[CLR]";tl$:gosub160:gosub190:gosub610:poke679,13:sys49152
670 ll=3
680 poke679,ll:sys49186
690 geta$:ifa$=""then690
700 sys49186
710 ifa$="[CTLE]"thenll=ll-1
720 ifa$="[CTLF]"thenll=ll+1
730 ifa$=" "then780
740 ifll<3thenll=3
750 ifll>22thenll=22
760 ifll=4orll=16then710
770 goto680
780 sys49186
790 ifll=3thengoto1100
800 ifll=5thengoto1160
810 ifll>5andll<13thengoto1240
820 ifll=15thengoto1240
830 ifll=13orll=14thengoto1390
840 ifll=18thengoto1440
```

```
 850 ifll=20thengoto1490
 860 ifll=22thenprint"[CLR]":end
 870 ifll=19thengoto1520
 880 ifll=17thengoto1570
 890 ifll=21thengoto1810
 900 goto680
 910 rem *** input ***
 920 rem 0=text only
 930 rem 1=mixed
 940 rem 2=numeric only
 950 gosub620
 960 a$="":b$="[CL14]"
 970 printa$;" ";:a=len(a$)
 980 printleft$(b$,a+1);
 990 getin$:ifin$=""then990
1000 ifin$=chr$(20)anda$<>""thena$=left$(a$,len
                          (a$)-1):goto970
1010 ifin$=chr$(13)thencl$="[SP7]":gosub620:return
1020 ifa=ilthen970
1030 b=asc(in$)
1040 ifb>47andb<58thengoto1080
1050 ifb<65orb>90thengoto970
1060 ifit=2then970
1070 a$=a$+chr$(b+32):goto970
1080 ifit=0then970
1090 a$=a$+chr$(b):goto970
1100 rem *** change sound set ***
1110 cl$="A to Z "
1120 it=0:il=1:gosub910
1130 ns=(asc(a$)-97)
1140 fora=0to10:ss(sn,a)=cs(a):next
1150 sn=ns:sys49186:goto660
1160 rem *** change waveform ***
1170 cl$="T S P N":it=0:il=1:gosub910:a=asc(a$)
1180 ifa=116thena=0:goto1230
1190 ifa=115thena=1:goto1230
1200 ifa=112thena=2:goto1230
1210 ifa=110thena=3:goto1230
1220 goto1160
1230 sys49186:cs(0)=a:gosub190:goto680
1240 rem *** general values ***
1250 cl$="0 -":aa=ll-5
1260 ifra(aa)>=0thengoto1280
1270 cl$="1 -"
1280 zz=abs(ra(aa)):zz$=str$(zz)
1290 cl$=cl$+zz$
1300 iflen(cl$)=7then1330
1310 iflen(cl$)>7thencl$="- 4095":goto1330
1320 cl$=cl$+" ":goto1300
1330 it=2:il=4:gosub910
1340 xx=val(a$)
1350 ifxx>zzthengoto1240
1360 ifxx=0andra(aa)<0thengoto1240
1370 cs(aa)=xx
1380 sys49186:gosub190:goto680
1390 rem *** on or off ***
1400 aa=ll-5:b=cs(aa)
1410 b=abs(b-1)
1420 cs(aa)=b:sys49186
1430 gosub190:goto680
1440 rem *** silence ***
1450 forv=0to2:vv=v*7
1460 poke54276+vv,(lw(v)and254)
1470 next
1480 sys49186:goto680
1490 rem *** clear sound effect ***
```

CONTINUED FROM PAGE 109

old headmaster? His name was Dawes, too. He was a terror and one look from him and your 64 would hide under the table!)

Dear CCI

I would like to draw to your attention the type of material advertised in Commodore Computing International, May 1988 Page 52, Volume 6 No. 10. There is nothing to point out what the game entails and its readily available to any person of any age who is able to buy a postal order I would like to say this item called *Fantasy* could be described as pornographic and should not be available through a magazine which is generally available to all age.

I would also add my children sent for it as they are keen collectors, but they soon put this cassette to one side.

I would like to know if this game could be returned and the £6.50p refunded.

Yours sincerely,

MB J Rogers

Dear MB J Rogers,

CCI has a wide readership, many, perhaps the largest part, over 18 years old. The advertisement to which you refer clearly states "X Rated, Adults Only" and "WARNING. If you are easily offended do not order this game." It couldn't be clearer than that, could it? The advertisement itself is not offensive and we considered we had therefore no right to ban it. With a warning like that on it there is surely the need to apply the famous rule "Caveat Emptor" – buyer beware. It is CCI's policy not to act as a censor for advertisements unless they offend against normal public taste, and it would be difficult to say that this is the case here. We can hardly start censoring products, though many, especially shoot 'em up games, are based completely on violence, which, though lots of players seem to enjoy it, some people think to be substantially offensive and dangerously anti-social than sex. Your "children" – you do not tell us their ages, so they could also be over 18 and able to see X Rated films or videos – must have realised the subject matter of this game – there is a girl scantily clad as an illustration – before they bought it. However they do appear to have shown the good taste to put it aside as they – or you find it unpleasant. If you return the game, explaining the situation, it may be the suppliers will refund your money. But it is doubtful that if you were to return another product, say a book, and tell the shop you wanted your money back because you didn't like the story – or the sex scenes in it – you would have much chanceofgetting your purchase price into your bank account again.

```
1500 sq=sn:sn=26:gosub160:sn=sq
1510 sys49186:gosub190:goto680
1520 rem *** volume ***
1530 vo=vo+1
1540 ifyo=16thenvo=0
1550 poke54296,vo
1560 sys49186:gosub190:goto680
1570 rem *** play effect ***
1580 poke54296,vo
1590 vv=(cs(1)-1)*7:v=vv/7
1600 poke54276+vv,0
1610 poke54272+vv,cs(2)
1620 poke54273+vv,cs(3)
1630 p=cs(10):ph=int(p/256):pl=p-(256*ph)
1640 poke54274+vv,pl
1650 poke54275+vv,ph
1660 poke54277+vv,cs(5)+(cs(4)*16)
1670 poke54278+vv,cs(7)+(cs(6)*16)
1680 wa=cs(0):wa=wa+4:wa=2↑wa:wa=wa+1
1690 ifcs(8)=1thenwa=wa+4
1700 ifcs(9)=1thenwa=wa+2
1710 poke54276+vv,wa:lw(v)=wa:sys49186:goto680
1720 rem *** m/c poke ***
1730 da(dd)=169:dd=dd+1
1740 da(dd)=d1:dd=dd+1
1750 da(dd)=141:dd=dd+1
1760 dh=int(d2/256)
1770 dl=d2-(256*dh)
1780 da(dd)=dl:dd=dd+1
1790 da(dd)=dh:dd=dd+1
1800 return
1810 rem *** data ***
1820 fora=0to10:ss(sn,a)=cs(a):next
1830 print"[CLR]Data for effect ";chr$(sn+193);".":print"────────────────────[CD]"
1840 dd=0:vv=(cs(1)-1)*7
1850 d1=0:d2=54276+vv:gosub1720
1860 print"Do you want a preset frequency ???[CD]"
1870 geta$:ifa$<>"y"anda$<>"n"then1870
1880 ifa$="n"thengoto1910
1890 d1=cs(2):d2=54272+vv:gosub1720
1900 d1=cs(3):d2=54273+vv:gosub1720
1910 gosub1970
1920 d1=(cs(4)*16)+cs(5):d2=54277+vv
1930 gosub1720
1940 d1=(cs(6)*16)+cs(7):d2=54278+vv
1950 gosub1720
1960 goto2040
1970 ifcs(0)<>2thengoto2030
1980 pw=cs(10)
1990 pl=int(pw/256)
2000 ph=pw-(pl*256)
2010 d1=pl:d2=54274+vv:gosub1720
2020 d1=ph:d2=54275+vv:gosub1720
2030 return
2040 wa=2↑(cs(0)+4)
2050 wa=wa+1
2060 ifcs(8)=1thenwa=wa+4
2070 ifcs(9)=1thenwa=wa+2
2080 d1=wa:d2=54276+vv:gosub1720
2090 da(dd)=96:da(dd+1)=-1
2100 rem *** output data ***
2110 dd=0:qq=0:print
2120 ifda(dd)=-1thengoto2200
2130 ifqq=1thenprint",";
2140 a$=str$(da(dd))
2150 a$=right$(a$,len(a$)-1)
2160 iflen(a$)<3thena$="0"+a$:goto2160
2170 printa$;:qq=1
2180 dd=dd+1
2190 goto2120
2200 print
2210 poke198,0
2220 print"[CD]Press any key."
2230 geta$:ifa$=""then2230
2240 goto660
```

SYS 50000

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C128 1571 disk drive, 1901 colour monitor, MPS 801 printer with descenders software £500. Will separate. Phone 0484 29990 after 7pm

Amiga 100 512k, colour monitor 2nd disk drive 1 month's use includes warranties, manuals, software including Dpaint and other games. Perfect condition, £900 best offer, 0272-684331 after 7, Chris, Room B110 Bristol

C64 user wishes to swap games (only on disk) write to: Petter, P.B. 2015 Ekholt, N-1501 Moss, Norway. NB: Send list

Amiga penpals wanted, to swap programs and manuals. Send list or disks to: Klaus Jensen, Normasvej 17, 2000 K.B.H.F. Denmark

Amiga Penpals wanted to swap programs, info, tips, etc. Please write to: Jorgen Smith, Slevik Plata 119, N.1620 Gressvik, Norway. All letters answered

C64/128 Penpals Wanted, to swap games etc. Disk only. Send lists/disks to: Adrian Canning, 80 Fairview Avenue, Wigmore, Gillingham, Kent, ME8 0QD

C64 Owner, wishes to swap games with others. Write to: Jan Pedro Tumusok, Gunnulsv. 26,0670, Oslo, Norway. Disk only. All letters answered!!!!

Commodore 64 for sale, with 1541 disk drive, C2N datacorder, action replay cartridge, Quickshot joystick. 20 disks and 60 cassettes worth over £400. All boxed, will sell for £250. Contact 0480 51455

Swap C64 Progs. Latest stuff tape or disk send list to Les, 30 Gilmonby Road, Park End, Middlesbrough, Cleveland

64 Software at cut prices including Frogger, Games Creator, Jungle Trouble, 35 amazing games, Kong for list, William Greenleaf, Pipers Cottage, Grove Heath, Ripley, Surrey, GU23 6EU

Wanted: 1571 disk drive, MIDI interface, C128 word processor. Phone Newbury 0635 238807 (evenings)

Amiga Contacts: Wanted around the world. Write to Bill Walker, 17 Adelphi Terrace, Currock, Carlisle, Cumbria

Amiga 500 owner wishes to swap games all over the world. All letters answered. Send disks or letters to Wayne Cowper, 16 Sarridge Close, Rainham, Essex, England RM13 9LL

C64 Penpals Wanted: From all over the world. Send letter to: Paul Colmer (Aged 13), 149 London Road, High Wycombe, Bucks, HP11 1BT, England

Magazines, 18 Your Commodore mags £8, 18 Commodore User mags £8, 17 ZZap!64 mags £8, 17 C.C.I. mags £8 or the lot for £30, phone 021 588 7429

Amiga User wants penpals. All letter will be answered. Please write to: Baard Ove Haberland, Alvernlia 79, N-1453 Bfornemyr

C64 Owner wants to swap software and programs, tips. Disk only. Laurie Attree, 49 Orissa Road, Plumstead, London, SE18 1RQ. Hi to Eagle soft, FBR, Hotline

C64 Swaps. 790 titles, Impact, Dark Castle, Magnetron, plus new stuff! Disk only. Mike, 120 Auriel Avenue, Dagenham, Essex, RM10 8BU

Amiga Penpals Wanted, to swap the newest stuff. Send disks/lists to: K. Persson, Betesv 22, S-240 10 Dalby, Sweden. Greetings to: TCC, THC, ADE, NCC, V-42

C64 User wants to swap software all over the world. Send your list. Disk Only to: Trond Carlson, P.O. Box 666, N-8001 Bodo, Norway

Plus/4 for sale lots of games worth £110, sell for £70 o.n.o. Phone 0823 286261 after 4pm. Ask for Robin

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Amiga Owner wants to swap software. Fast reply. Write to: Knut Erik Rotne, Kvikne, 2640 Vinstra, Norway.

German Amiga User wants to swap new software with Amiga user all over the world. Many new titles. Write to: Joe, PLK 1009484, 3400 Gottigen, Germany

C-64 software, laser basic £25, laser compiler £10, game maker (disk)£10, alter ego (male) £20. Also mouse and cheese £20, 1520 plotter £35. Phone (0268) 510143 and ask for Steve

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Amiga owner wishes to swap games. I have many titles. Send lists or disks to James McDonald, 5 Rotherfield Avenue, Bexhill-on-Sea, East Sussex TN40 1SY

C128 1570, CN2, dozens of programs inc. super script, super base, swift 128. Blank disks, manuals all V.G.C. Boxed £300 o.n.o. Phone after 7. John 02302 4972

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C64 User wishes to swap hints tips or programs. Send disk and list to: J. Critchley, 39 Stuart Road, Walton, Merseyside, L4 5QS. All letters answered

C64 Games for sale, all on tape and are original not copies. For list send S.A.E. to Peter, 42 Brightfield Road, Lee Green, London SE12 8QF

C/DPS 1101 daisy wheel printer. 10/12/15 pitch. Excellent condition, spare ribbons. Unused omniwriter W/P. spell checker for C64 disk. Very user friendly. buyer to collect. £80 o.n.o.

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C64 Owner would like to trade new games worldwide. Please send list or disks to: Bob Richards, 8309-20th Avenue, Brooklyn, New York 11214, USA

Who can help beginner C64/C128 owner start out? Please write to Jutta Schandel, 4 Garth House, High Street, Bognor Regis, PO21 1HQ

CBM 64, Pattasette, Normal cassette interface, double cassette interface, games, joystick, 80 mags, books £110 o.n.o. Brother printer £70 o.n.o. Everything fully boxed. Tel: Scarborough (0723) 366853

Atari 520 STFM only 6 months old, with software. Upgrading to Amiga £340 o.n.o., also Smith-Corona daisy wheel serial/parallel. After 5. 0753 26755

CBM64 and Amiga user wants to swap new stuff with people all over the world. Send disks or list to: Kare M. Sand, Kolbrenna 174, 2380 Brumunddal, Norway

C128 plus Datassette plus books and games (£200 worth) £230. C64/C128 multi modem (3 months old) £80 near offers. Tel: 030670 357

Amiga Owner, recently upgraded from humbler origins, wishes to contact other Amiga users to exchange ideas/programs. If interested phone (0245) 355114 or write to Paul Ireland, 15 Grove Road, Chelmsford, Essex

Amiga 1010 disk drive £95 canon PJ1080A four colour printer with Amiga driver £195. Clayton, Fleet, Hants 0252 621609

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C64 Owner wants to swap games on disk only. All letters answered. All newest games send your list to: Jan Wagenius, 2090 Hurdal, Norway

For Sale Currah speech 64 and CBM music maker, both hardly used and in original cases. £30. Tel: Charles 01 902 1643 (After 7pm)

4 User wants penpals from all over the world ring 0703 873056 Colin

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Amiga Owner, wishes to swap programs with other Amiga users. Send list to Ale Rivinoja, Mossg. 29, 65466 Karlstad, Sweden

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Amiga 1000 for sale 512K with 1010 drive t/craft, g/craft, shanghai, pawn, t/drive 30 public domain disks £600. Tel: 04862 21458 (Woking)

Calc Plus I will give almost anything to get my hands on 4 Calc plus cartridge and manual. Phone 0293 23984 (evenings only)

Amiga Owner wants to contact other users for help tips and exchange of progs, write to J. Kolacs, 9 Cairns Close, Kings Park, Bradford, W. Yorks, BD2 1EW

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The Beginners Guide to Basic 8

Software support line

The Basic 8 operating system (reviewed CCI Feb 88) for the C128 is a very complex system and it is not easy for the beginner to get to grips with the system. The writers of the Basic 8 system have realised this problem and have produced a book that guides the beginner through the Basic 8 system in a nice easy manner.

The booklet is 45 pages in all and is jammed full of examples for you to try out, as well as the book you get a disk with the examples saved on it, so avoiding any typing problems.

The book starts off with an explanation of the window system, and how to set it up, error trapping, drawmodes and colours are all described in the first pages of the book. These first two pages are probably the most important in the book, as without the commands listed here you will not be able to make anything work within the Basic 8 system.

Many of the primary commands that operate with the window system are described in some depth, constantly backed up with short examples. The concept of buffered windows is covered next, and the section is rounded off with a short program that emphasizes the commands covered.

In the same way the Box, Sphere and Style commands are explained again with lots of examples. This is continued throughout the book, and the commands covered are: DISPLAY, SCROLL, FLASH, DIR$ LSTRUCT, BUFFER, ZOOM, SEND, MOUSE, PTR, LINE, DOT, ANGLE, VIEW, SCALE, GROW, ARC, CBRUSH, FETCH, STRUCT, BRUSHPATRN, SSTRUCT, COPY, STORE, SDAT, and LOGO.

Their style is clear and this book is the first that I have seen where the examples outnumber the text by quite a considerable margin. The book is a beginners' guide, but it does not lead you by the hand very much. The commands are well enough documented but there is a lot of background information missing in some parts that is abundant for other commands. There is no doubt that this book does go a long way towards overcoming some of the deficientices of the original Basic 8 handbook but it is still not a subject for the absolute beginner, it is still the same complex operating system and it is very easy to get confused. I only wish that this book had been included in with the original Basic 8 package, it would have saved me a lot of grief in trying to get the program to do something! If you are having problems in using Basic 8 then this book and the examples in it will undoubtedly help you come to grips with the system.

Price: £19.95. **A. Eskelson**

Contact: Financial Systems Software Ltd. Tel: (0386) 750217.

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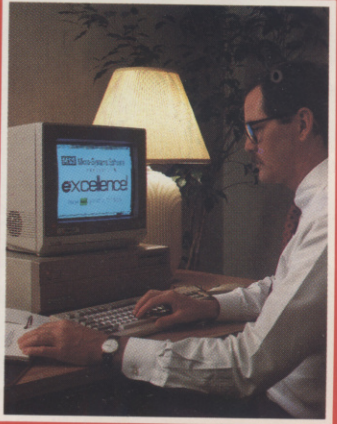

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